

GS-5424G

User Manual

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Safety and Regulatory

Audience

This guide is for the networking professional managing the standalone PG28CB switch series. It is recommended that only professionals with experience working with Intelligent Technology INC. networking devices who are familiar with the Ethernet and local area networking terminology, should service the equipment.

Conventions

The following conventions are used in this manual to convey instructions and information:

Command descriptions use these conventions:

- Commands and keywords are in boldface text.
- Arguments for which you supply values are in italic.
- Square brackets ([]) mean optional elements.
- Braces ({ }) group required choices, and vertical bars (|) separate the alternative elements.
- Braces and vertical bars within square brackets ({ [|]}) mean a required choice within an optional element.

Interactive examples use these conventions:

- Nonprinting characters, such as passwords or tabs, are in angle brackets (< >). Notes and cautions use the following conventions and symbols:
 - Note
Means additional information. Notes contain additional useful information or references to material available outside of this document.
 - Caution
Indicates that the reader must be careful. In a situation where a Caution is listed, a user may cause equipment damage or loss of data.

I Introduction

Thank you for choosing a Edimax WEB Smart Ethernet Switch. This device is designed to be operational right out-of-the-box as a standard bridge. In the default configuration, it will forward packets between connecting devices after powered up.

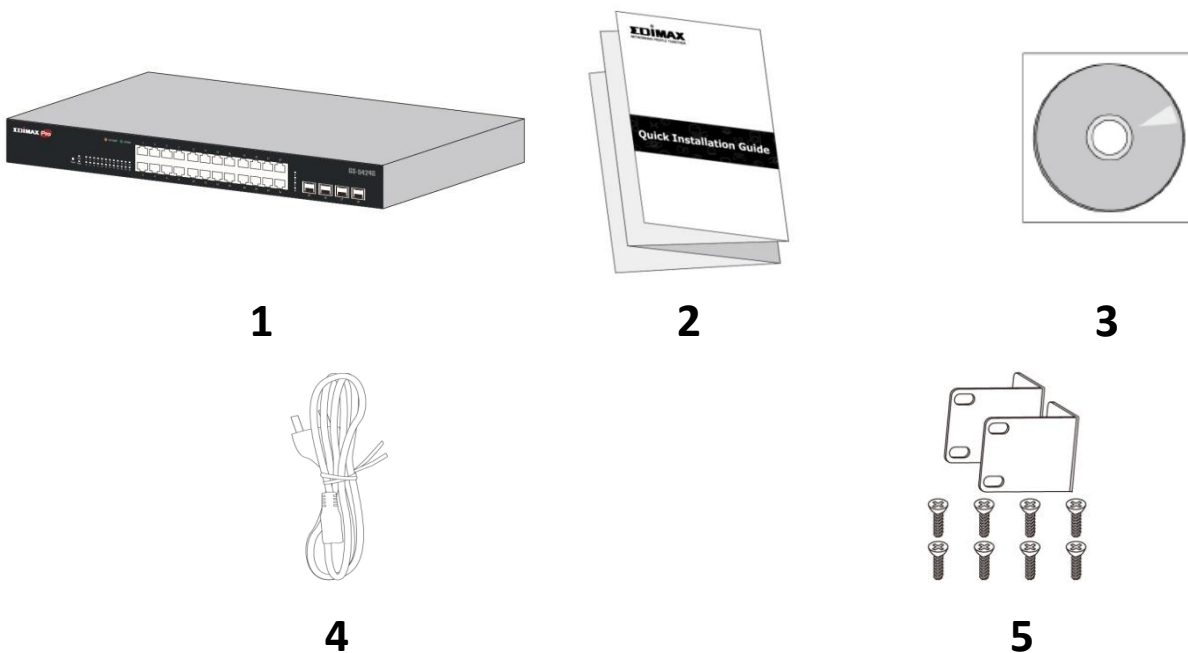
Before you begin installing the switch, make sure you have all of the package contents available, and a PC with a web browser for using web-based system management tools.

I-1 Overview

The Edimax GS-5424G is 24-Port Gigabit Smart Managed Switch with 4 SFP Ports.

I-2 Package Content

Before using the product, check that the items listed below are included and in good condition. If any item does not accord with the table, please contact your dealer immediately.



- 1.** GS-5424G Switch
- 2.** Quick Installation Guide
- 3.** CD

- 4.** Power Cord
- 5.** Rack-Mount Kit & Screws

I-3 Features

- Supports up to 24 10/100/1000Mbps Gigabit Ethernet ports and 4 mini-GBIC/SFP slots
- IEEE 802.1Q VLAN allows network segmentation to enhance performance and security
- Supports Access Control List (ACL)
- Switch capacity: PG28CB: 56Gbps, Forwarding rate: 41.6Mbps
- Supports IGMP Snooping V1 / V2 / V3
- 8K MAC address table and 10K jumbo frames
- 19-inch rack-mountable metal case

I-4 Product Components

I-4-1 Ports

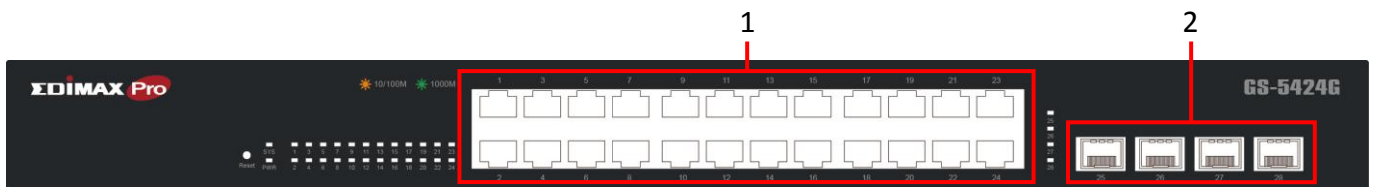


Figure 1 - Front View

| No. | Name | Description |
|-----|------------------------------------|---|
| 1 | 10/100/1000Mbps RJ-45 ports (1-24) | Designed to connect to network devices with a bandwidth of 10Mbps, 100Mbps or 1000Mbps. Each has a corresponding 10/100/1000Mbps LED. |
| 2 | SFP Ports | Designed to install SFP modules to connect to network devices with a bandwidth of 1000Mbps. Each has a corresponding 1000Mbps LED. |



Figure 2 - Rear View

| No. | Name | Description |
|-----|-------------|-------------------------------|
| 1 | AC power in | Support AC100 – 240V 50-60Hz. |

I-4-2 LED Indicators

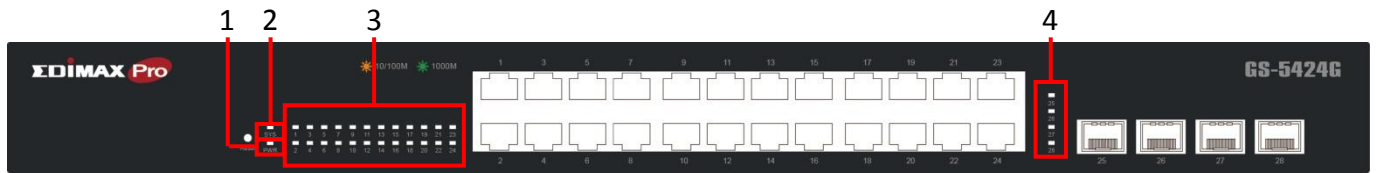


Figure 3 - Front View LED Indicators

| No. | Name | Description |
|-----|----------|--|
| 1 | Power | <ul style="list-style-type: none"> ● Off: power off ● On: power on |
| 2 | System | <ul style="list-style-type: none"> ● Off: system not ready ● On: system ready ● Blinking: system boot-up |
| 3 | Port LED | <ul style="list-style-type: none"> ● Off: port disconnected or link fail ● Green on: 1000Mbps connected ● Amber on: 10/100Mbps connected ● Blinking: sending or receiving data |
| 4 | SFP LED | <ul style="list-style-type: none"> ● Off: port disconnected or link fail ● Green on: 1000Mbps connected |

II Installation

This chapter describes how to install and connect your Edimax Switch. Read the following topics and perform the procedures in the correct order. Incorrect installation may cause damage to the product.

II-1 Mounting the Switch

There are two ways to physically set up the switch.

- Place the switch on a flat surface.
- Mount the switch in a standard rack (1 rack unit high).

II-1-1 Placement Tips

- Ambient Temperature — To prevent the switch from overheating, do not operate it in an area that exceeds an ambient temperature of 122°F (50°C).
- Air Flow — Be sure that there is adequate air flow around the switch.
- Mechanical Loading — Be sure that the switch is level and stable to avoid any hazardous conditions.
- Circuit Overloading — Adding the switch to the power outlet must not overload that circuit.

Follow these guidelines to install the switch securely.

- Put the switch in a stable place such as a desktop, to avoid it falling.
- Ensure the switch works in the proper AC input range and matches the voltage labeled.
- Ensure there is proper heat dissipation from and adequate ventilation around the switch.
- Ensure the switch's location can support the weight of the switch and its accessories.

II-1-2 Desktop Mounting

Please install the four rubber feet (included) on the bottom of the switch and place the switch at the desired location.

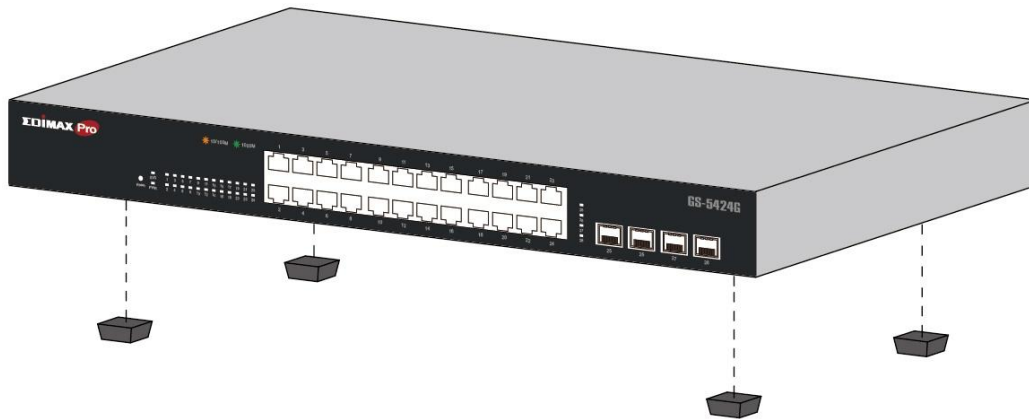


Figure 4 - Desktop Installation

II-1-3 Rack Mounting

You can mount the switch in any standard size, 19-inch (about 48 cm) wide rack. The switch requires 1 rack unit (RU) of space, which is 1.75 inches (44.45 mm) high.

For stability, load the rack from the bottom to the top, with the heaviest devices on the bottom. A top-heavy rack is likely to be unstable and may tip over.

When mounting smaller switch products into a standard 19-inch rack, a pair of extension brackets (sometimes referred to as ears) are needed to adapt the switch to the rack size.

These extension brackets are mounted on the switch using the screws provided in the kit, and have two holes that are used to then screw the switch into the rack.

An example of one type of these extension brackets is shown in the following figure.

A common problem that occurs during rack mounting is the distance between the screw holes on the rack. Some racks are made with a uniform distance between all of the holes, and others have the holes organized into groups (see photo on the next page for an example).

When organized into groups, the switch must be placed in the rack so that the holes in the extension brackets line up correctly.

1. Align the mounting brackets with the mounting holes on the switch's side panels and secure the brackets with the screws provided.

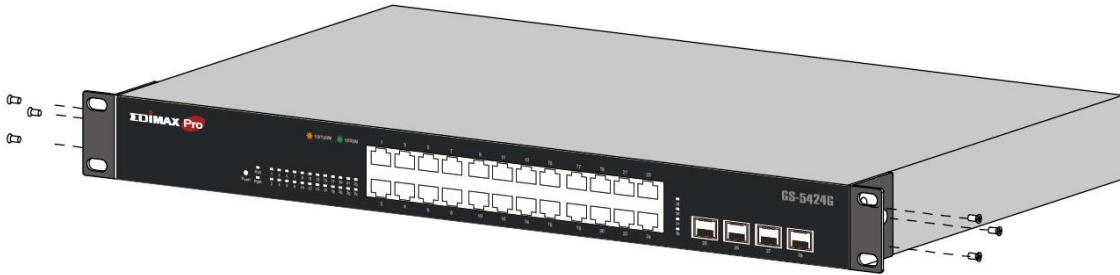


Figure 5 - Bracket Installation

2. Secure the switch on the equipment rack with the screws provided.

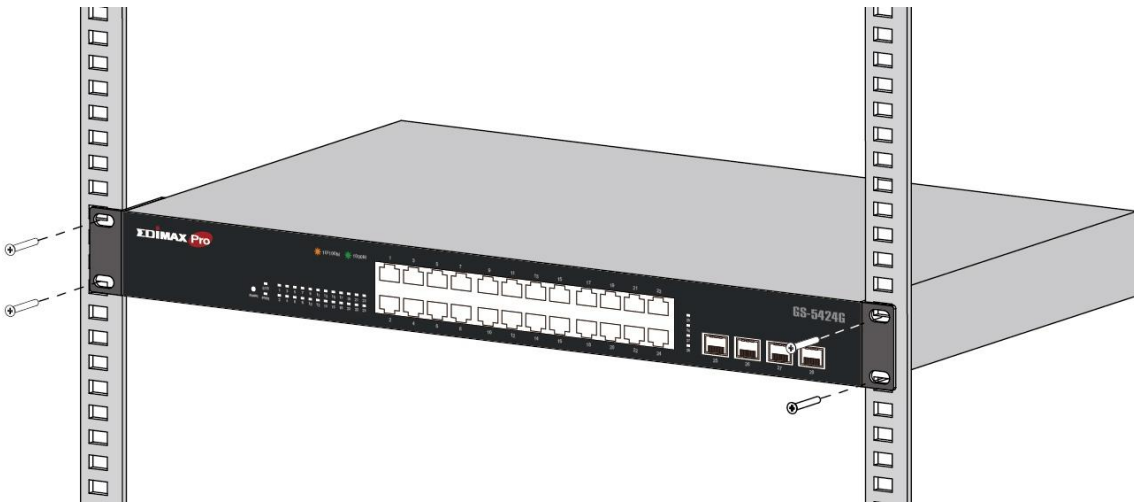


Figure 6 - Rack Installation

III Getting Started

This section provides an introduction to the web-based configuration utility, and covers the following topics:

- Powering on the device
- Connecting to the network
- Starting the web-based configuration utility

III-1 Connecting to Power

Power down and disconnect the power cord before servicing or wiring a switch.

Do not disconnect modules or cabling unless the power is first switched off. The device only supports the voltage outlined in the type plate. Do not use any other power components except those specifically designated for the switch.

Disconnect the power cord before installation or cable wiring.

The switch is powered by the AC 100-240 V 50/60Hz internal high-performance power supply. It is recommended to connect the switch with a single-phase three-wire power source with a neutral outlet, or a multifunctional computer professional source. Connect the AC power connector on the back panel of the switch to the external power source with the included power cord, and check the power LED is on.



Figure 7 - Rear View AC Power Socket

III-2 Connecting to Network

To connect the switch to the network:

- 1.** Connect an Ethernet cable to the Ethernet port of a computer
- 2.** Connect the other end of the Ethernet cable to one of the numbered Ethernet ports of the switch. The LED of the port lights if the device connected is active.
- 3.** Repeat Step 1 and Step 2 for each device to connect to the switch.

We strongly recommend using CAT-5E or better cable to connect network devices. When connecting network devices, do not exceed the maximum cabling distance of 100 meters (328 feet). It can take up to one minute for attached devices or the LAN to be operational after it is connected. This is normal behavior.

Connect the switch to end nodes using a standard Cat 5/5e Ethernet cable (UTP/STP) to connect the switch to end nodes as shown in the illustration below.

Switch ports will automatically adjust to the characteristics (MDI/MDI-X, speed, duplex) of the device to which the switch is connected.

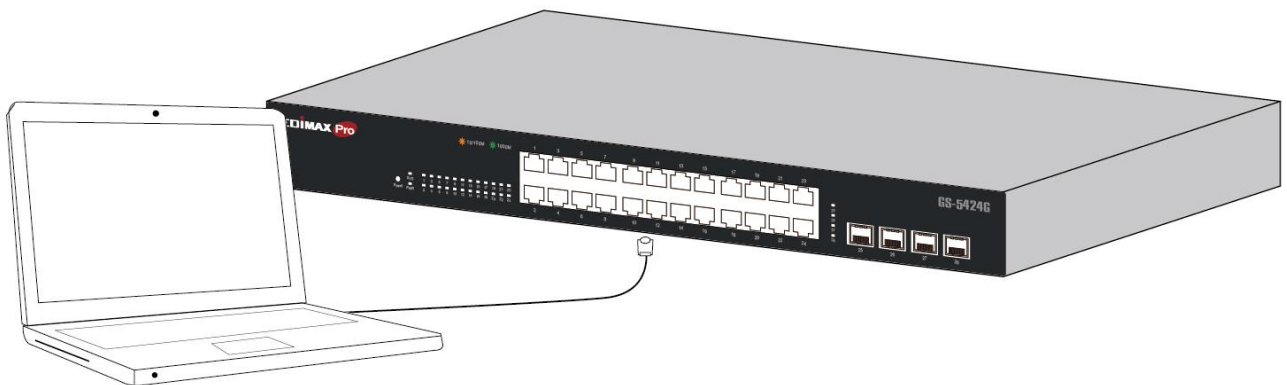


Figure 8 - PC Connect

III-3 Starting the Web-based Configuration Utility

This section describes how to navigate the web-based switch configuration utility. Be sure to disable any pop-up blocker.

Browser Restrictions

- If you are using older versions of Internet Explorer, you cannot directly use an IPv6 address to access the device. You can, however, use the DNS (Domain Name System) server to create a domain name that contains the IPv6 address, and then use that domain name in the address bar in place of the IPv6 address.
- If you have multiple IPv6 interfaces on your management station, use the IPv6 global address instead of the IPv6 link local address to access the device from your browser.

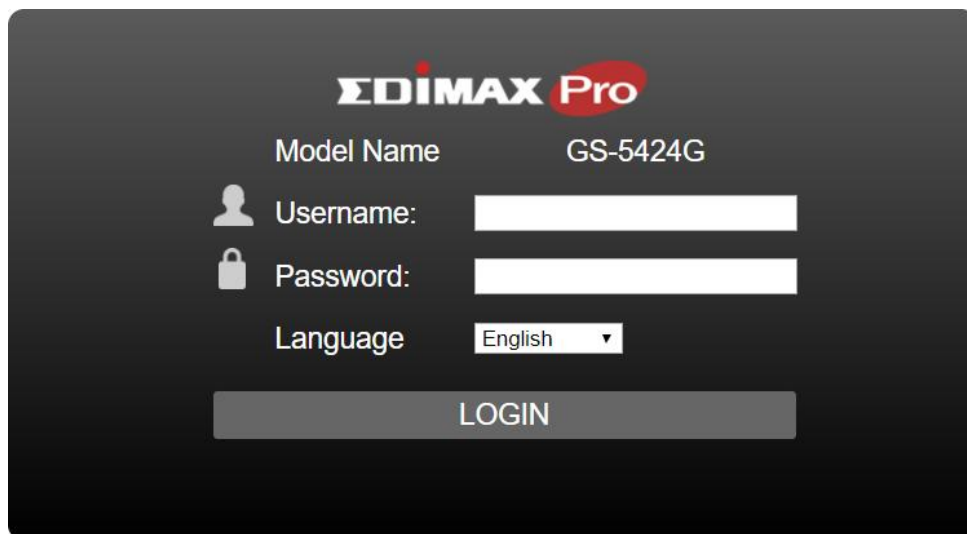
Launching the Configuration Utility

To open the web-based configuration utility:

1. Open a Web browser.
2. Enter the IP address of the device you are configuring in the address bar on the browser (factory default IP address is 192.168.2.1) and then press Enter.

When the device is using the factory default IP address, its power LED flashes continuously. When the device is using a DHCP assigned IP address or an administrator-configured static IP address, the power LED is lit a solid color. Your computer's IP address must be in the same subnet as the switch. For example, if the switch is using the factory default IP address, your computer's IP address can be in the following range: 192.168.2.x (whereas x is a number from 2 to 254).

After a successful connection, the login window displays.



EDIMAX Pro

Model Name GS-5424G

Username:

Password:

Language English ▾

LOGIN

Figure 9 - Login Window

III-3-1 Logging In

The default username is **admin** and the default password is **1234**. The first time that you log in with the default username and password, you are required to enter a new password.

To log in to the device configuration utility:

1. Enter the default user ID (admin) and the default password (1234).
2. If this is the first time that you logged on with the default user ID (admin) and the default password (1234) it is recommended that you change your password immediately. See **IV-13 Management** on page 171 for additional information.

When the login attempt is successful, the System Information window displays.

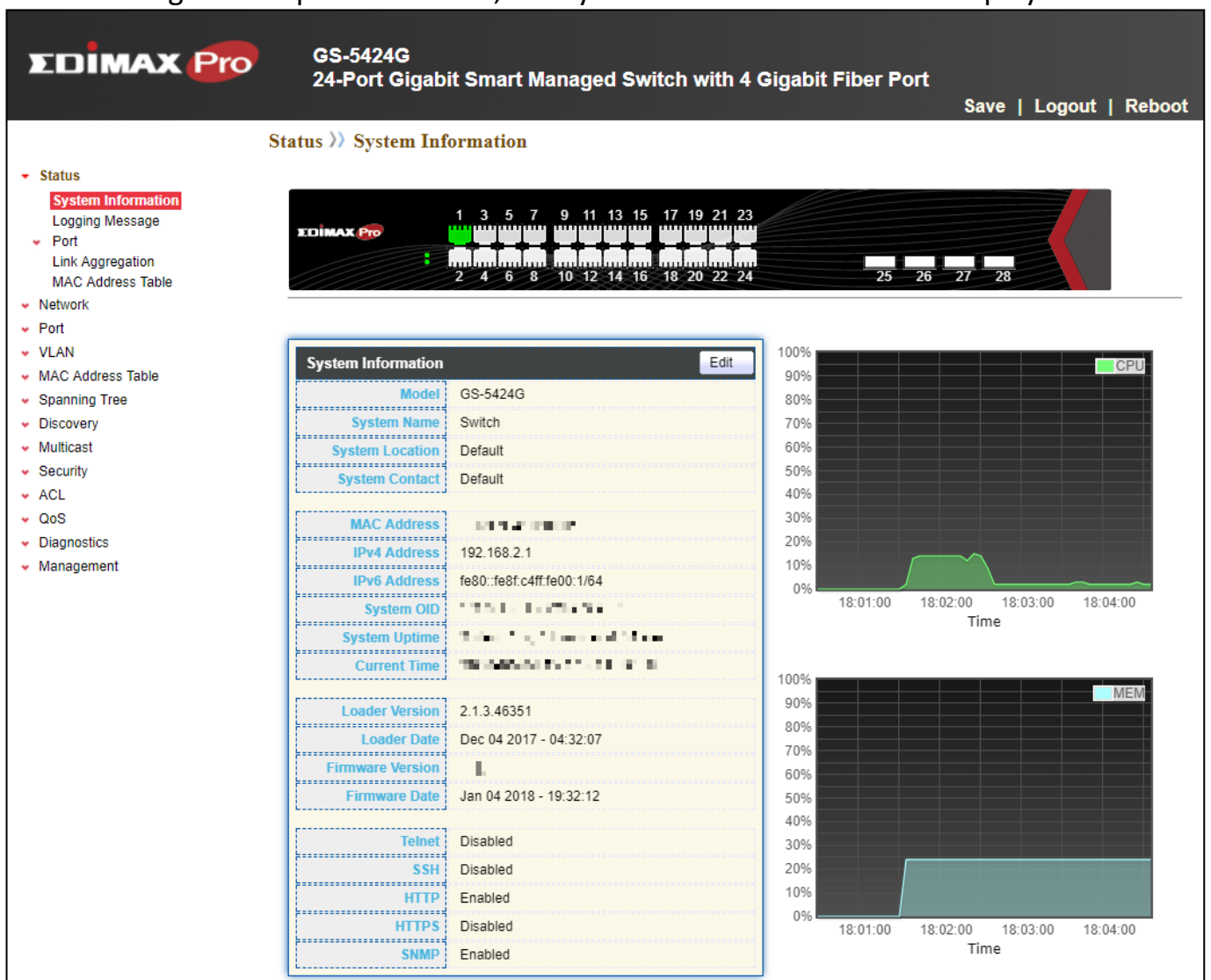


Figure 10 - System Information

If you entered an incorrect username or password, an error message appears and the Login page remains displayed on the window. If you are having problems logging in,

please see the Launching the Configuration Utility section in the Administration Guide for additional information.

III-3-2 Logging Out

By default, the application logs out after ten minutes of inactivity.

To manually logout, click Logout in the top right corner of any page.

When a timeout occurs or you intentionally log out of the system, a message appears and the Login page appears, with a message indicating the logged-out state. After you log in, the application returns to the initial page.

IV Web-based Switch Configuration

The smart switch software provides rich Layer 2 functionality for switches in your networks. This chapter describes how to use the web-based management interface (Web UI) to configure the switch’s features.

For the purposes of this manual, the user interface is separated into four sections, as shown in the following figure:

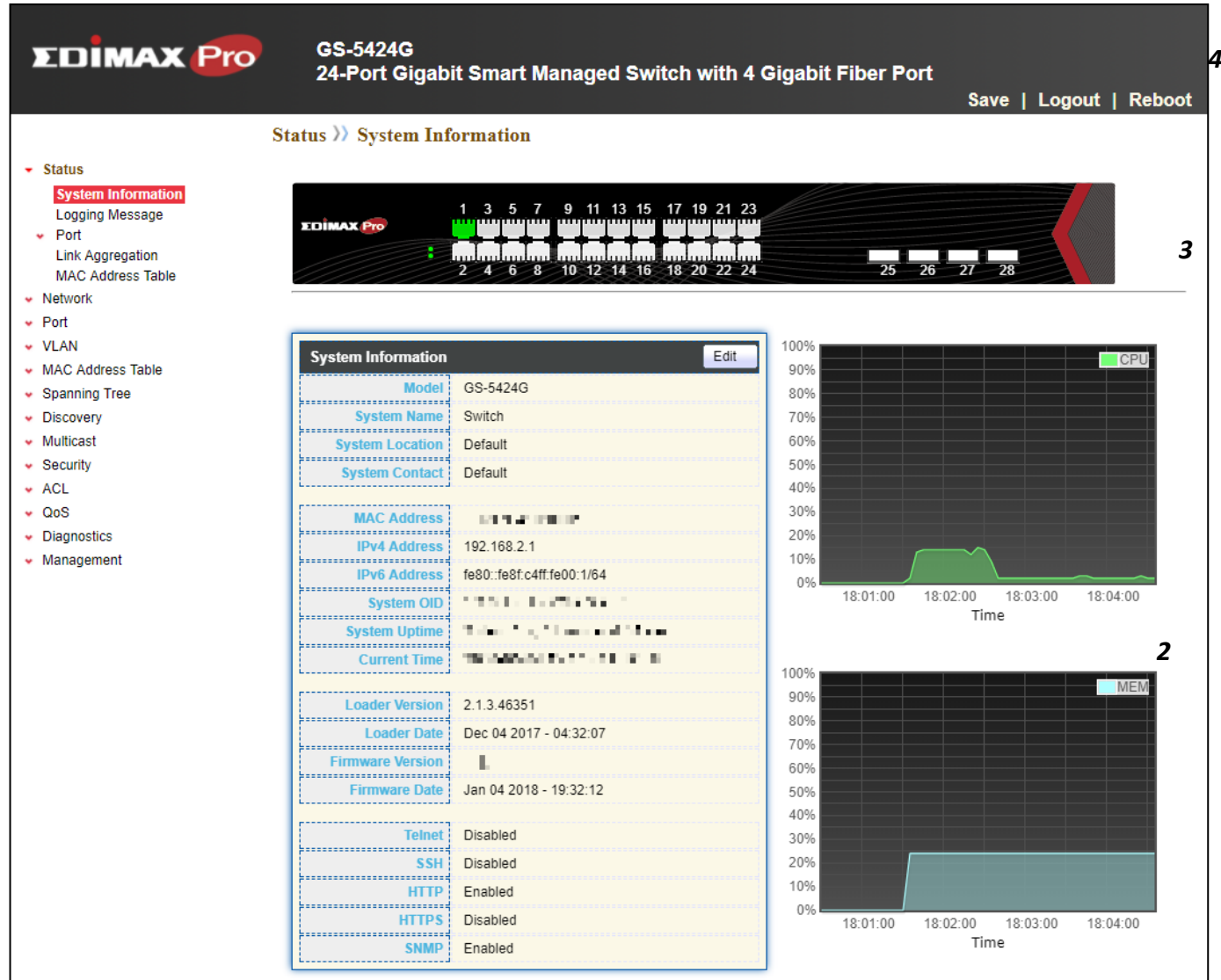


Figure 11 - User Interface

| No. | Name | Description |
|-----|------------------------------|---|
| 1 | Configuration menu | Navigate to locate specific switch functions. |
| 2 | Configuration settings | Edit specific function settings. |
| 3 | Switch’s current link status | Green squares indicate the port link is up, while black squares indicate the port link is down. |
| 4 | Common toolbar | Provides access to frequently used settings. |

IV-1 Status

Use the Status pages to view system information and status.

IV-1-1 System Information

This page shows switch panel, CPU utilization, Memory utilization and other system current information. It also allows user to edit some system information.

To display the Device Information web page, click **Status > System Information**.

The screenshot displays the EDIMAX Pro web interface for a GS-5424G switch. The main area shows 'System Information' with the following data:

| Item | Value |
|------------------|---------------------------|
| Model | GS-5424G |
| System Name | Switch |
| System Location | Default |
| System Contact | Default |
| MAC Address | [Redacted] |
| IPv4 Address | 192.168.2.1 |
| IPv6 Address | fe80::fe8f:c4ff:fe00:1/64 |
| System OID | [Redacted] |
| System Uptime | [Redacted] |
| Current Time | [Redacted] |
| Loader Version | 2.1.3.46351 |
| Loader Date | Dec 04 2017 - 04:32:07 |
| Firmware Version | [Redacted] |
| Firmware Date | Jan 04 2018 - 19:32:12 |
| Telnet | Disabled |
| SSH | Disabled |
| HTTP | Enabled |
| HTTPS | Disabled |
| SNMP | Enabled |

Two utilization graphs are shown on the right: CPU usage (green area chart) and MEM usage (cyan area chart), both plotted against time from 18:01:00 to 18:04:00.

Figure 12 - Status > System Information

| Item | Description |
|-----------------|--|
| Model | Model name of the switch. |
| System Name | System name of the switch. This name will also use as CLI prefix of each line. ("Switch>" or "Switch#"). |
| System Location | Location information of the switch. |
| System Contact | Contact information of the switch. |

| | |
|------------------|--|
| MAC Address | Base MAC address of the switch. |
| IPv4 Address | Current system IPv4 address. |
| System OID | SNMP system object ID. |
| System Uptime | Total elapsed time from booting. |
| Current Time | Current system time. |
| Loader Version | Boot loader image version. |
| Loader Date | Boot loader image build date. |
| Firmware Version | Current running firmware image version. |
| Firmware Date | Current running firmware image build date. |
| Telnet | Current Telnet service enable/disable state. |
| SSH | Current SSH service enable/disable state. |
| HTTP | Current HTTP service enable/disable state. |
| HTTPS | Current HTTPS service enable/disable state. |
| SNMP | Current SNMP service enable/disable state. |

Click “Edit” button on the table title to edit following system information.

The screenshot shows a web-based dialog box titled "Edit System Information". The dialog contains three text input fields stacked vertically. The first field is labeled "System Name" and contains the text "Switch". The second field is labeled "System Location" and contains the text "Default". The third field is labeled "System Contact" and contains the text "Default". Below these fields are two buttons: "Apply" and "Close". The entire dialog is enclosed in a dashed blue border.

Figure 13 - Status > System Information > Edit System Information

| Item | Description |
|-----------------|--|
| System Name | System name of the switch. This name will also use as CLI prefix of each line. (“Switch>” or “Switch#”). |
| System Location | Location information of the switch. |
| System Contact | Contact information of the switch. |

IV-1-2 Logging Message

To view the logging messages stored on the RAM and Flash, click **Status > Logging Message**.

Logging Message Table

Viewing **RAM** ▾

Showing **All** ▾ entries Showing 1 to 4 of 4 entries 🔍

| Log ID | Time | Severity | Description |
|--------|----------------------|----------|--|
| 1 | Jan 01 2000 00:01:19 | notice | New http connection for user admin, source 192.168.2.22 ACCEPTED |
| 2 | Jan 01 2000 00:01:01 | notice | GigabitEthernet28 link up |
| 3 | Jan 01 2000 00:00:58 | notice | RESTART: System restarted - Cold Start |
| 4 | Jan 01 2000 00:00:58 | notice | Logging is enabled |

Clear Refresh First Previous **1** Next Last

Figure 14 - Status > Logging Message

| Item | Description |
|-------------|--|
| Log ID | The log identifier. |
| Time | The time stamp for the logging message. |
| Severity | The severity for the logging message. |
| Description | The description of logging message. |
| Viewing | The logging view including: <ul style="list-style-type: none"> ● RAM: Show the logging messages stored on the RAM. ● Flash: Show the logging messages stored on the Flash. |
| Clear | Clear the logging messages. |
| Refresh | Refresh the logging messages. |

IV-1-3 Port

IV-1-3-1 Statistics

This page displays standard counters on network traffic from the Interfaces, Ethernet-like and RMONMIB. Interfaces and Ethernet-like counters display errors on the traffic passing through each port. RMON counters provide a total count of different frame types and sizes passing through each port. The “Clear” button will clear MIB counter of current selected port.

To display the Port Flow Chart web page, click **Status > Port > Statistics**.

| | |
|--------------|--|
| Port | GE1 ▼ |
| MIB Counter | <input checked="" type="radio"/> All <input type="radio"/> Interface <input type="radio"/> Etherlike <input type="radio"/> RMON |
| Refresh Rate | <input type="radio"/> None <input type="radio"/> 5 sec <input checked="" type="radio"/> 10 sec <input type="radio"/> 30 sec |

Clear

Interface

| | |
|--------------------|---|
| ifInOctets | 0 |
| ifInUcastPkts | 0 |
| ifInNUcastPkts | 0 |
| ifInDiscards | 0 |
| ifOutOctets | 0 |
| ifOutUcastPkts | 0 |
| ifOutNUcastPkts | 0 |
| ifOutDiscards | 0 |
| ifInMulticastPkts | 0 |
| ifInBroadcastPkts | 0 |
| ifOutMulticastPkts | 0 |
| ifOutBroadcastPkts | 0 |

Etherlike

| | |
|----------------------------------|---|
| dot3StatsAlignmentErrors | 0 |
| dot3StatsFCSErrors | 0 |
| dot3StatsSingleCollisionFrames | 0 |
| dot3StatsMultipleCollisionFrames | 0 |
| dot3StatsDeferredTransmissions | 0 |
| dot3StatsLateCollisions | 0 |
| dot3StatsExcessiveCollisions | 0 |

| | |
|--------------------------------|---|
| dot3StatsSymbolErrors | 0 |
| dot3ControlInUnknownOpCodes | 0 |
| dot3InPauseFrames | 0 |
| dot3OutPauseFrames | 0 |
| RMON | |
| etherStatsDropEvents | 0 |
| etherStatsOctets | 0 |
| etherStatsPkts | 0 |
| etherStatsBroadcastPkts | 0 |
| etherStatsMulticastPkts | 0 |
| etherStatsCRCAlignErrors | 0 |
| etherStatsUnderSizePkts | 0 |
| etherStatsOverSizePkts | 0 |
| etherStatsFragments | 0 |
| etherStatsJabbers | 0 |
| etherStatsCollisions | 0 |
| etherStatsPkts64Octets | 0 |
| etherStatsPkts65to127Octets | 0 |
| etherStatsPkts128to255Octets | 0 |
| etherStatsPkts256to511Octets | 0 |
| etherStatsPkts512to1023Octets | 0 |
| etherStatsPkts1024to1518Octets | 0 |

Figure 15 - Status > Port > Statistics

| Item | Description |
|--------------|--|
| Port | Select one port to show counter statistics. |
| MIB Counter | Select the MIB counter to show different counter type <ul style="list-style-type: none"> ● All: All counters. ● Interface: Interface related MIB counters. ● Etherlike: Ethernet-like related MIB counters. ● RMON: RMON related MIB counters. |
| Refresh Rate | Refresh the web page every period of seconds to get new counter of specified port. |

IV-1-3-2 Error Disabled

To display the Error Disabled web page, click **Status > Port > Error Disabled**.

Error Disabled Table

| <input type="checkbox"/> | Port | Reason | Time Left (sec) |
|--------------------------|------|--------|-----------------|
| <input type="checkbox"/> | GE1 | --- | --- |
| <input type="checkbox"/> | GE2 | --- | --- |
| <input type="checkbox"/> | GE3 | --- | --- |
| <input type="checkbox"/> | GE4 | --- | --- |
| <input type="checkbox"/> | GE5 | --- | --- |
| <input type="checkbox"/> | GE6 | --- | --- |
| <input type="checkbox"/> | GE7 | --- | --- |
| <input type="checkbox"/> | GE8 | --- | --- |
| <input type="checkbox"/> | GE9 | --- | --- |
| <input type="checkbox"/> | GE10 | --- | --- |
| <input type="checkbox"/> | GE11 | --- | --- |
| <input type="checkbox"/> | GE12 | --- | --- |
| <input type="checkbox"/> | GE13 | --- | --- |
| <input type="checkbox"/> | GE14 | --- | --- |
| <input type="checkbox"/> | GE15 | --- | --- |
| <input type="checkbox"/> | GE16 | --- | --- |
| <input type="checkbox"/> | GE17 | --- | --- |
| <input type="checkbox"/> | GE18 | --- | --- |
| <input type="checkbox"/> | GE19 | --- | --- |
| <input type="checkbox"/> | GE20 | --- | --- |
| <input type="checkbox"/> | GE21 | --- | --- |
| <input type="checkbox"/> | GE22 | --- | --- |
| <input type="checkbox"/> | GE23 | --- | --- |
| <input type="checkbox"/> | GE24 | --- | --- |
| <input type="checkbox"/> | GE25 | --- | --- |
| <input type="checkbox"/> | GE26 | --- | --- |
| <input type="checkbox"/> | GE27 | --- | --- |
| <input type="checkbox"/> | GE28 | --- | --- |
| <input type="checkbox"/> | LAG1 | --- | --- |
| <input type="checkbox"/> | LAG2 | --- | --- |
| <input type="checkbox"/> | LAG3 | --- | --- |

Figure 16 - Status > Port > Error Disabled

| Item | Description |
|--------------------------|---|
| <input type="checkbox"/> | Select one or more port to operate. |
| Port | Interface or port number. |
| Reason | Port will be disabled by one of the following error reason: <ul style="list-style-type: none"> ● BPDU Guard ● UDLD ● Self Loop ● Broadcast Flood ● Unknown Multicast Flood ● Unicast Flood ● ACL |

| | |
|-----------------|--|
| | <ul style="list-style-type: none"> ● Port Security Violation ● DHCP rate limit ● ARP rate limit |
| Time Left (sec) | The time left in second for the error recovery. |
| Refresh | Refresh the current page. |
| Recover | Recover the selected port status. |

IV-1-3-3 Bandwidth Utilization

This page allows user to browse ports’ bandwidth utilization in real time. This page will refresh automatically in every refresh period.

To display Bandwidth Utilization web page, click **Status > Port > Bandwidth Utilization**.

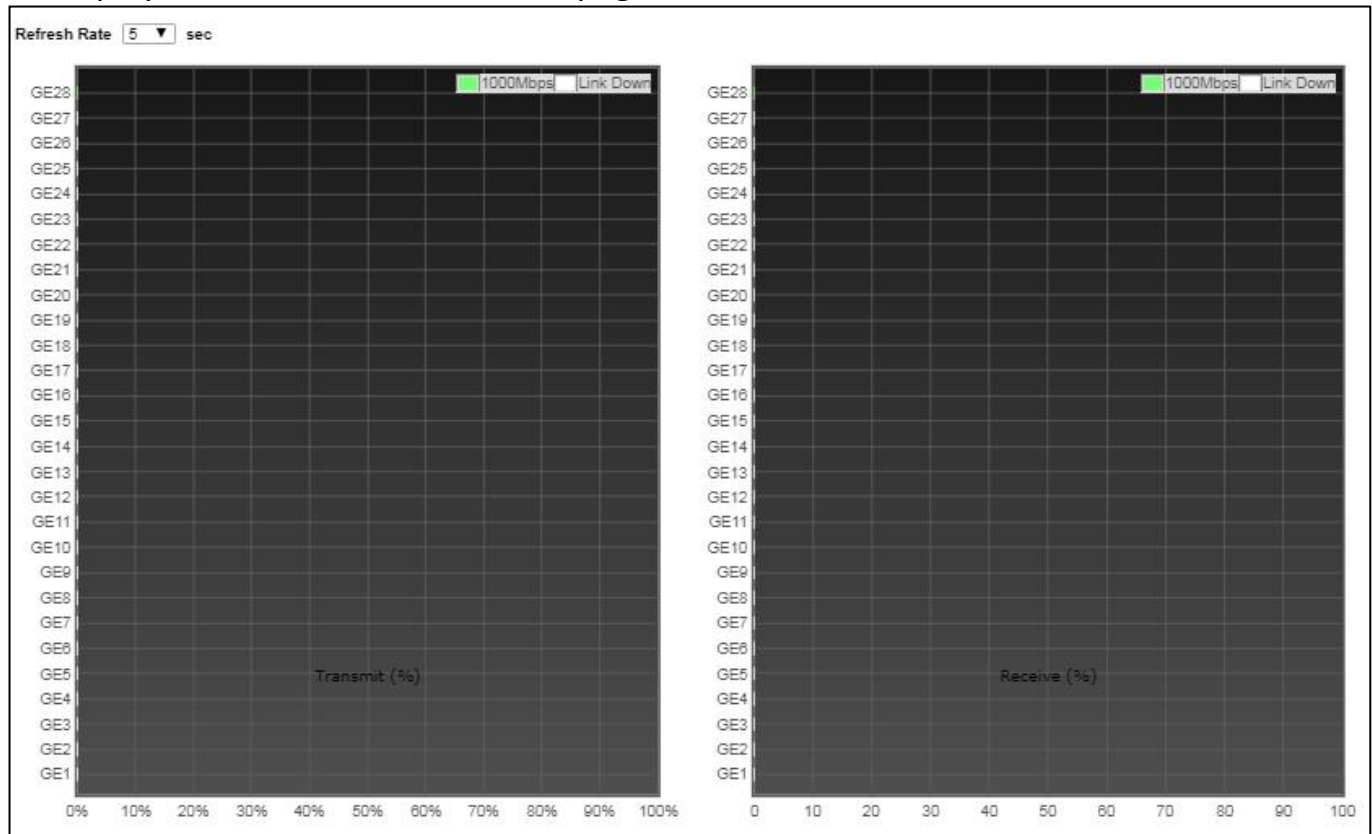


Figure 17 - Status > Port > Bandwidth Utilization

| Item | Description |
|--------------|---|
| Refresh Rate | Refresh the web page every period of seconds to get new bandwidth utilization data. |

IV-1-4 Link Aggregation

To display the Link Aggregation web page, click **Status > Link Aggregation**.

Link Aggregation Table

| LAG | Name | Type | Link Status | Active Member | Inactive Member |
|-------|------|------|-------------|---------------|-----------------|
| LAG 1 | | --- | --- | | |
| LAG 2 | | --- | --- | | |
| LAG 3 | | --- | --- | | |
| LAG 4 | | --- | --- | | |
| LAG 5 | | --- | --- | | |
| LAG 6 | | --- | --- | | |
| LAG 7 | | --- | --- | | |
| LAG 8 | | --- | --- | | |

Figure 18 - Status > Link Aggregation

| Item | Description |
|-----------------|--|
| LAG | LAG Name. |
| Name | LAG port description. |
| Type | <p>The type of the LAG.</p> <ul style="list-style-type: none"> ● Static: The group of ports assigned to a static LAG are always active members. ● LACP: The group of ports assigned to dynamic LAG are candidate ports. LACP determines which candidate ports are active member ports. |
| Link Status | LAG port link status. |
| Active Member | Active member ports of the LAG. |
| Inactive Member | Inactive member ports of the LAG. |

IV-1-5 MAC Address Table

The MAC address table page displays all MAC address entries on the switch including static MAC address created by administrator or auto learned from hardware. The “Clear” button will clear all dynamic entries and “Refresh” button will retrieve latest MAC address entries and show them on page.

To display the MAC Address Table web page, click **Status > MAC Address Table**.

| VLAN | MAC Address | Type | Port |
|------|-------------------|------------|------|
| 1 | 74:DA:38:17:6E:7A | Management | CPU |
| 1 | B8:6B:23:6D:C1:14 | Dynamic | GE28 |

Figure 19 - Status > MAC Address Table

| Item | Description |
|-------------|--|
| VLAN | VLAN ID of the mac address. |
| MAC Address | MAC address. |
| Type | The type of MAC address <ul style="list-style-type: none">● Management: DUT’s base mac address for management Purpose.● Static: Manually configured by administrator● Dynamic: Auto learned by hardware. |
| Port | The type of Port <ul style="list-style-type: none">● CPU: DUT’s CPU port for management purpose.● Other: Normal switch port. |

IV-2 Network

Use the Network pages to configure settings for the switch network interface and how the switch connects to a remote server to get services.

IV-2-1 IP Address

This section allows you to edit the IP address, Netmask, Gateway and DNS server of the switch.

To view the IP Address menu, navigate to **Network > IP Address**.

| IPv4 Address | |
|-----------------|--|
| Address Type | <input checked="" type="radio"/> Static <input type="radio"/> Dynamic |
| IP Address | 192.168.2.1 |
| Subnet Mask | 255.255.255.0 |
| Default Gateway | 192.168.2.254 |
| DNS Server 1 | 168.95.1.1 |
| DNS Server 2 | 168.95.192.1 |

| IPv6 Address | |
|--------------------|--|
| Auto Configuration | <input checked="" type="checkbox"/> Enable |
| DHCPv6 Client | <input type="checkbox"/> Enable |
| IPv6 Address | |
| Prefix Length | 0 (0 - 128) |
| IPv6 Gateway | |
| DNS Server 1 | |
| DNS Server 2 | |

| Operational Status | |
|----------------------|------------------------------|
| IPv4 Address | 192.168.2.1 |
| IPv4 Default Gateway | 192.168.2.254 |
| IPv6 Address | fe80::76da:38ff:fe17:6e7a/64 |
| IPv6 Gateway | :: |
| Link Local Address | fe80::76da:38ff:fe17:6e7a/64 |

Apply

Figure 20 - Network > IP Address

| Item | Description |
|-----------------|--|
| Address Type | The address type of switch IP configuration including <ul style="list-style-type: none"> ● Static: Static IP configured by users will be used. ● Dynamic: Enable the DHCP to obtain the IP address from a DHCP server. |
| IP Address | Specify the switch static IP address on the static configuration. |
| Subnet Mask | Specify the switch subnet mask on the static configuration. |
| Default Gateway | Specify the default gateway on the static configuration. The |

| | |
|--------------------------------|--|
| | default gateway must be in the same subnet with switch IP address configuration. |
| DNS Server 1 | Specify the primary user-defined IPv4 DNS server configuration. |
| DNS Server 2 | Specify the secondary user-defined IPv4 DNS server configuration. |
| Table 3-2: IPv6 Address fields | |
| IPv4 Address | The operational IPv4 address of the switch. |
| IPv4 Gateway | The operational IPv4 gateway of the switch. |
| IPv6 Address v6 | The operational IPv6 address of the switch. |
| IPv6 Gateway | The operational IPv6 gateway of the switch. |
| Link Local Address | The IPv6 link local address for the switch. |

IV-2-2 System Time

This page allows user to set time source, static time, time zone and daylight saving settings. Time zone and daylight saving takes effect both static time or time from SNTP server.

To display System Time page, click **Network > System Time**.

| | |
|--------------------------------------|--|
| Source | <input type="radio"/> SNTP |
| | <input type="radio"/> From Computer |
| | <input checked="" type="radio"/> Manual Time |
| Time Zone | UTC +8:00 ▼ |
| SNTP | |
| Address Type | <input checked="" type="radio"/> Hostname |
| | <input type="radio"/> IPv4 |
| Server Address | <input type="text"/> |
| Server Port | 123 (1 - 65535, default 123) |
| Manual Time | |
| Date | 2000-01-01 YYYY-MM-DD |
| Time | 00:15:47 HH:MM:SS |
| Daylight Saving Time | |
| Type | <input checked="" type="radio"/> None |
| | <input type="radio"/> Recurring |
| | <input type="radio"/> Non-recurring |
| | <input type="radio"/> USA |
| | <input type="radio"/> European |
| Offset | 60 Min (1 - 1440, default 60) |
| Recurring | From: Day Sun ▼ Week First ▼ Month Jan ▼ Time <input type="text"/> |
| | To: Day Sun ▼ Week First ▼ Month Jan ▼ Time <input type="text"/> |
| Non-recurring | From: <input type="text"/> YYYY-MM-DD <input type="text"/> HH:MM |
| | To: <input type="text"/> YYYY-MM-DD <input type="text"/> HH:MM |
| Operational Status | |
| Current Time | 2000-01-01 00:15:47 UTC+8 |
| <input type="button" value="Apply"/> | |

Figure 21 - Network > System Time

| Item | Description |
|----------------------|---|
| Source | Select the time source. <ul style="list-style-type: none"> ● SNTP: Time sync from NTP server. ● From Computer: Time set from browser host. ● Manual Time: Time set by manually configure. |
| Time Zone | Select a time zone difference from listing district. |
| SNTP | |
| Address Type | Select the address type of NTP server. This is enabled when time source is SNTP. |
| Server Address | Input IPv4 address or hostname for NTP server. This is enabled when time source is SNTP. |
| Server Port | Input NTP port for NTP server. Default is 123. This is enabled when time source is SNTP. |
| Manual Time | |
| Date | Input manual date. This is enabled when time source is manual. |
| Time | Input manual time. This is enabled when time source is manual. |
| Daylight Saving Time | |
| Type | Select the mode of daylight saving time. <ul style="list-style-type: none"> ● Disable: Disable daylight saving time. ● Recurring: Using recurring mode of daylight saving time. ● Non-Recurring: Using non-recurring mode of daylight saving time. ● USA: Using daylight saving time in the United States that starts on the second Sunday of March and ends on the first Sunday of November. ● European: Using daylight saving time in the Europe that starts on the last Sunday in March and ending on the last Sunday in October. |
| Offset | Specify the adjust offset of daylight saving time. |
| Recurring From | Specify the starting time of recurring daylight saving time. This field available when selecting "Recurring" mode. |
| Recurring To | Specify the ending time of recurring daylight saving time. This field available when selecting "Recurring" mode. |
| Non-recurring From | Specify the starting time of non-recurring daylight saving time. This field available when selecting "Non-Recurring" mode. |
| Non-recurring To | Specify the ending time of recurring daylight saving time. This field available when selecting "Non-Recurring" mode. |
| Non-recurring From | Specify the starting time of non-recurring daylight saving time. This field available when selecting "Non-Recurring" mode. |
| Non recurring To | Specify the ending time of recurring daylight saving time. This field available when selecting "Non-Recurring" mode. |

IV-3 Port

Use the Port pages to configure settings for switch port related features.

IV-3-1 Port Setting

This page shows port current status and allow user to edit port configurations. Select port entry and click “**Edit**” button to edit port configurations.

To display Port Setting web page, click **Port > Port Setting**.

Port Setting Table

| Entry | Port | Type | Description | State | Link Status | Speed | Duplex | Flow Control |
|--------------------------|------|------|--------------------|---------|-------------|--------------|-------------|---------------------|
| <input type="checkbox"/> | 1 | GE1 | 1000M Copper | Enabled | Down | Auto | Auto | Disabled |
| <input type="checkbox"/> | 2 | GE2 | 1000M Copper | Enabled | Down | Auto | Auto | Disabled |
| <input type="checkbox"/> | 3 | GE3 | 1000M Copper | Enabled | Down | Auto | Auto | Disabled |
| <input type="checkbox"/> | 4 | GE4 | 1000M Copper | Enabled | Down | Auto | Auto | Disabled |
| <input type="checkbox"/> | 5 | GE5 | 1000M Copper | Enabled | Down | Auto | Auto | Disabled |
| <input type="checkbox"/> | 6 | GE6 | 1000M Copper | Enabled | Down | Auto | Auto | Disabled |
| <input type="checkbox"/> | 7 | GE7 | 1000M Copper | Enabled | Down | Auto | Auto | Disabled |
| <input type="checkbox"/> | 8 | GE8 | 1000M Copper | Enabled | Down | Auto | Auto | Disabled |
| <input type="checkbox"/> | 9 | GE9 | 1000M Copper | Enabled | Down | Auto | Auto | Disabled |
| <input type="checkbox"/> | 10 | GE10 | 1000M Copper | Enabled | Down | Auto | Auto | Disabled |
| <input type="checkbox"/> | 11 | GE11 | 1000M Copper | Enabled | Down | Auto | Auto | Disabled |
| <input type="checkbox"/> | 12 | GE12 | 1000M Copper | Enabled | Down | Auto | Auto | Disabled |
| <input type="checkbox"/> | 13 | GE13 | 1000M Copper | Enabled | Down | Auto | Auto | Disabled |
| <input type="checkbox"/> | 14 | GE14 | 1000M Copper | Enabled | Down | Auto | Auto | Disabled |
| <input type="checkbox"/> | 15 | GE15 | 1000M Copper | Enabled | Down | Auto | Auto | Disabled |
| <input type="checkbox"/> | 16 | GE16 | 1000M Copper | Enabled | Down | Auto | Auto | Disabled |
| <input type="checkbox"/> | 17 | GE17 | 1000M Copper | Enabled | Down | Auto | Auto | Disabled |
| <input type="checkbox"/> | 18 | GE18 | 1000M Copper | Enabled | Down | Auto | Auto | Disabled |
| <input type="checkbox"/> | 19 | GE19 | 1000M Copper | Enabled | Down | Auto | Auto | Disabled |
| <input type="checkbox"/> | 20 | GE20 | 1000M Copper | Enabled | Down | Auto | Auto | Disabled |
| <input type="checkbox"/> | 21 | GE21 | 1000M Copper | Enabled | Down | Auto | Auto | Disabled |
| <input type="checkbox"/> | 22 | GE22 | 1000M Copper | Enabled | Down | Auto | Auto | Disabled |
| <input type="checkbox"/> | 23 | GE23 | 1000M Copper | Enabled | Down | Auto | Auto | Disabled |
| <input type="checkbox"/> | 24 | GE24 | 1000M Copper | Enabled | Down | Auto | Auto | Disabled |
| <input type="checkbox"/> | 25 | GE25 | 1000M Combo Copper | Enabled | Down | Auto | Auto | Disabled |
| <input type="checkbox"/> | 26 | GE26 | 1000M Combo Copper | Enabled | Down | Auto | Auto | Disabled |
| <input type="checkbox"/> | 27 | GE27 | 1000M Combo Copper | Enabled | Down | Auto | Auto | Disabled |
| <input type="checkbox"/> | 28 | GE28 | 1000M Combo Copper | Enabled | Up | Auto (1000M) | Auto (Full) | Disabled (Disabled) |

Figure 22 - Port > Port Setting

| Item | Description |
|-------------|-------------------|
| Port | Port Name. |
| Type | Port media type. |
| Description | Port Description. |

| | |
|--------------|--|
| State | Port admin state <ul style="list-style-type: none"> ● Enabled: Enable the port. ● Disabled: Disable the port. |
| Link Status | Current port link status <ul style="list-style-type: none"> ● Up: Port is link up. ● Down: Port is link down. |
| Speed | Current port speed configuration and link speed status. |
| Duplex | Current port duplex configuration and link duplex status. |
| Flow Control | Current port flow control configuration and link flow control status. |

Click **“Edit”** button to edit Port Setting menu

Edit Port Setting

Port GE1

Description

State Enable

Speed

Auto

10M

Auto - 10M

100M

Auto - 100M

1000M

Auto - 1000M

Auto - 10M/100M

Duplex

Auto

Full

Half

Flow Control

Auto

Enable

Disable

Figure 23 - Port > Port Setting > Port Setting

| Item | Description |
|-------------|--|
| Port | Selected Port list. |
| Description | Port media type. |
| State | Port admin state. <ul style="list-style-type: none"> ● Enabled: Enable the port. ● Disabled: Disable the port. |
| Speed | Port speed capabilities. <ul style="list-style-type: none"> ● Auto: Auto speed with all capabilities. ● Auto-10M: Auto speed with 10M ability only. |

| | |
|--------------|--|
| | <ul style="list-style-type: none"> ● Auto-100M: Auto speed with 100M ability only. ● Auto-1000M: Auto speed with 1000M ability only. ● Auto-10M/100M: Auto speed with 10M/100M abilities. ● 10M: Force speed with 10M ability. ● 100M: Force speed with 100M ability. ● 1000M: Force speed with 1000M ability. |
| Duplex | Port duplex capabilities. <ul style="list-style-type: none"> ● Auto: Auto duplex with all capabilities. ● Half: Auto speed with 10M and 100M ability only. ● Full: Auto speed with 10M/100M/1000M ability only. |
| Flow Control | Port flow control. <ul style="list-style-type: none"> ● Auto: Auto flow control by negotiation. ● Enabled: Enable flow control ability. ● Disabled: Disable flow control ability. |

IV-3-2 Long Range Mode

This page shows port current status and Enable long range mode will double the cabling distance but reduce the speed to 10Mbps.

To display Long Range Mode web page, click **Port > Long Range Mode Setting**.

Long Range Mode Table

Enable long range mode will double the cabling distance but reduce the speed to 10Mbps.

| Port | State |
|------|-----------|
| GE1 | Disable ▼ |
| GE2 | Disable ▼ |
| GE3 | Disable ▼ |
| GE4 | Disable ▼ |
| GE5 | Disable ▼ |
| GE6 | Disable ▼ |
| GE7 | Disable ▼ |
| GE8 | Disable ▼ |
| GE9 | Disable ▼ |
| GE10 | Disable ▼ |
| GE11 | Disable ▼ |
| GE12 | Disable ▼ |
| GE13 | Disable ▼ |
| GE14 | Disable ▼ |
| GE15 | Disable ▼ |
| GE16 | Disable ▼ |
| GE17 | Disable ▼ |
| GE18 | Disable ▼ |
| GE19 | Disable ▼ |
| GE20 | Disable ▼ |
| GE21 | Disable ▼ |
| GE22 | Disable ▼ |
| GE23 | Disable ▼ |
| GE24 | Disable ▼ |
| GE25 | Disable ▼ |
| GE26 | Disable ▼ |
| GE27 | Disable ▼ |
| GE28 | Disable ▼ |

Apply

Figure 24 - Port > Long Range Mode

IV-3-3 Error Disable

To display Error Disabled web page, click **Port > Error Disabled**

The screenshot shows a web configuration interface for 'Port > Error Disabled'. At the top, there is a 'Recovery Interval' field with the value '300' and a unit 'Sec (30 - 86400)'. Below this is a list of ten error disable reasons, each with an 'Enable' checkbox. All checkboxes are currently unchecked. The reasons are: BPDU Guard, UDLD, Self Loop, Broadcast Flood, Unknown Multicast Flood, Unicast Flood, ACL, Port Security, DHCP Rate Limit, and ARP Rate Limit. An 'Apply' button is located at the bottom left of the configuration area.

Figure 25 - Port > Error disable

| Item | Description |
|-------------------------|--|
| Recover Interval | Auto recovery after this interval for error disabled port. |
| BPDU Guard | Enabled to auto shutdown port when BPDU Guard reason occur. This reason caused by STP BPDU Guard mechanism. |
| UDLD | Enabled to auto shutdown port when UDLD violation occur. |
| Self Loop | Enabled to auto shutdown port when Self Loop reason occur. |
| Broadcast Flood | Enabled to auto shutdown port when Broadcast Flood reason occur. This reason caused by broadcast rate exceed broadcast storm control rate. |
| Unknown Multicast Flood | Enabled to auto shutdown port when Unknown Multicast Flood reason occur. This reason caused by unknown multicast rate exceed unknown multicast storm control rate. |
| Unicast Flood | Enabled to auto shutdown port when Unicast Flood reason occur. This reason caused by unicast rate exceed unicast storm control rate. |
| ACL | Enabled to auto shutdown port when ACL shutdown port reason occur. This reason caused packet match the ACL shutdown port action. |
| Port Security | Enabled to auto shutdown port when Port Security Violation reason occur. This reason caused by violation port security rules. |
| DHCP rate limit | Enabled to auto shutdown port when DHCP rate limit reason occur. This reason caused by DHCP packet rate exceed DHCP rate limit. |

| | |
|----------------|--|
| ARP rate limit | Enabled to auto shutdown port when ARP rate limit reason occur. This reason caused by DHCP packet rate exceed ARP rate limit. |
|----------------|--|

IV-3-4 Link Aggregation

IV-3-4-1 Group

This page allows user to configure link aggregation group load balance algorithm and group member.

To view the Group menu, navigate to **Port > Link Aggregation > Group**.

Figure 26 - Port > Link Aggregation > Group

| Item | Description |
|------------------------|--|
| Load Balance Algorithm | LAG load balance distribution algorithm <ul style="list-style-type: none"> ● src-dst-mac: Based on MAC address. ● src-dst-mac-ip: Based on MAC address and IP address. |
| LAG | LAG Name. |
| Name | LAG port description. |
| Type | The type of the LAG <ul style="list-style-type: none"> ● Static: The group of ports assigned to a static LAG are always active members. ● LACP: The group of ports assigned to dynamic LAG are candidate ports. LACP determines which candidate ports are active member ports. |
| Link Status | LAG port link status |

| | |
|-----------------|-----------------------------------|
| Active Member | Active member ports of the LAG. |
| Inactive Member | Inactive member ports of the LAG. |

Click **“Edit”** to edit Link Aggregation Group menu.

Figure 27 - Port > Link Aggregation > Group > Edit Link Aggregation Group

| Item | Description |
|--------|---|
| LAG | Selected LAG group ID. |
| Name | LAG port description. |
| Type | <p>The type of the LAG</p> <ul style="list-style-type: none"> ● Static: The group of ports assigned to a static LAG are always active members. ● LACP: The group of ports assigned to dynamic LAG are candidate ports. LACP determines which candidate ports are active member ports. |
| Member | Select available port to be LAG group member port. |

IV-3-4-2 Port Setting

This page shows LAG port current status and allow user to edit LAG port configurations. Select LAG entry and click “**Edit**” button to edit LAG port configurations.

To display LAG Port Setting web page, click **Port > Link Aggregation > Port Setting**.

Port Setting Table

| <input type="checkbox"/> | LAG | Type | Description | State | Link Status | Speed | Duplex | Flow Control |
|--------------------------|-------|------|-------------|---------|-------------|-------|--------|--------------|
| <input type="checkbox"/> | LAG 1 | | | Enabled | Down | Auto | Auto | Disabled |
| <input type="checkbox"/> | LAG 2 | | | Enabled | Down | Auto | Auto | Disabled |
| <input type="checkbox"/> | LAG 3 | | | Enabled | Down | Auto | Auto | Disabled |
| <input type="checkbox"/> | LAG 4 | | | Enabled | Down | Auto | Auto | Disabled |
| <input type="checkbox"/> | LAG 5 | | | Enabled | Down | Auto | Auto | Disabled |
| <input type="checkbox"/> | LAG 6 | | | Enabled | Down | Auto | Auto | Disabled |
| <input type="checkbox"/> | LAG 7 | | | Enabled | Down | Auto | Auto | Disabled |
| <input type="checkbox"/> | LAG 8 | | | Enabled | Down | Auto | Auto | Disabled |

Figure 28 - Port > Link Aggregation > Port Setting

| Item | Description |
|--------------|---|
| LAG | LAG Port Name. |
| Type | LAG Port media type. |
| Description | LAG Port description. |
| State | LAG Port admin state <ul style="list-style-type: none"> ● Enabled: Enable the port. ● Disabled: Disable the port. |
| Link Status | Current LAG port link status <ul style="list-style-type: none"> ● Up: Port is link up. ● Down: Port is link down. |
| Speed | Current LAG port speed configuration and link speed status. |
| Duplex | Current LAG port duplex configuration and link duplex status. |
| Flow Control | Current LAG port flow control configuration and link flow control status. |

Click **“Edit”** to view Edit Port Setting menu.

Figure 29 - Port > Link Aggregation > Port Setting > Edit Port Setting

| Item | Description |
|--------------|--|
| Port | Selected Port list. |
| Description | Port description. |
| State | Port admin state <ul style="list-style-type: none"> ● Enabled: Enable the port. ● Disabled: Disable the port. |
| Speed | Port speed capabilities <ul style="list-style-type: none"> ● Auto: Auto speed with all capabilities. ● Auto-10M: Auto speed with 10M ability only. ● Auto-100M: Auto speed with 100M ability only. ● Auto-1000M: Auto speed with 1000M ability only. ● Auto-10M/100M: Auto speed with 10M/100M abilities. ● 10M: Force speed with 10M ability. ● 100M: Force speed with 100M ability. ● 1000M: Force speed with 1000M ability. |
| Flow Control | Port flow control <ul style="list-style-type: none"> ● Auto: Auto flow control by negotiation. ● Enabled: Enable flow control ability. ● Disabled: Disable flow control ability. |

IV-3-4-3 LACP

This page allows user to configure LACP global and port configurations. Select ports and click “**Edit**” button to edit port configuration.

To display the LACP Setting web page , click **Port > Link Aggregation > LACP**.

System Priority: 32768 (1 - 65535, default 32768)

Apply

LACP Port Setting Table

| <input type="checkbox"/> | Entry | Port | Port Priority | Timeout |
|--------------------------|-------|------|---------------|---------|
| <input type="checkbox"/> | 1 | GE1 | 1 | Long |
| <input type="checkbox"/> | 2 | GE2 | 1 | Long |
| <input type="checkbox"/> | 3 | GE3 | 1 | Long |
| <input type="checkbox"/> | 4 | GE4 | 1 | Long |
| <input type="checkbox"/> | 5 | GE5 | 1 | Long |
| <input type="checkbox"/> | 6 | GE6 | 1 | Long |
| <input type="checkbox"/> | 7 | GE7 | 1 | Long |
| <input type="checkbox"/> | 8 | GE8 | 1 | Long |
| <input type="checkbox"/> | 9 | GE9 | 1 | Long |
| <input type="checkbox"/> | 10 | GE10 | 1 | Long |
| <input type="checkbox"/> | 11 | GE11 | 1 | Long |
| <input type="checkbox"/> | 12 | GE12 | 1 | Long |
| <input type="checkbox"/> | 13 | GE13 | 1 | Long |
| <input type="checkbox"/> | 14 | GE14 | 1 | Long |
| <input type="checkbox"/> | 15 | GE15 | 1 | Long |
| <input type="checkbox"/> | 16 | GE16 | 1 | Long |
| <input type="checkbox"/> | 17 | GE17 | 1 | Long |
| <input type="checkbox"/> | 18 | GE18 | 1 | Long |
| <input type="checkbox"/> | 19 | GE19 | 1 | Long |
| <input type="checkbox"/> | 20 | GE20 | 1 | Long |
| <input type="checkbox"/> | 21 | GE21 | 1 | Long |
| <input type="checkbox"/> | 22 | GE22 | 1 | Long |
| <input type="checkbox"/> | 23 | GE23 | 1 | Long |
| <input type="checkbox"/> | 24 | GE24 | 1 | Long |
| <input type="checkbox"/> | 25 | GE25 | 1 | Long |
| <input type="checkbox"/> | 26 | GE26 | 1 | Long |
| <input type="checkbox"/> | 27 | GE27 | 1 | Long |
| <input type="checkbox"/> | 28 | GE28 | 1 | Long |

Edit

Figure 30 - Port > Link Aggregation > LACP

| Item | Description |
|-----------------|--|
| System Priority | Configure the system priority of LACP. This decides the system priority field in LACP PDU. |
| Port | Port Name. |
| Port Priority | LACP priority value of the port. |
| Timeout | The periodic transmissions type of LACP PDUs. <ul style="list-style-type: none"> ● Long: Transmit LACP PDU with slow periodic (30s). ● Short: Transmit LACPP DU with fast periodic (1s). |

Click "Edit" button to view Edit LACP Port Setting menu.

Edit LACP Port Setting

Port: GE1

Port Priority: 1 (1 - 65535, default 1)

Timeout: Long Short

Apply Close

Figure 31 - Port > Link Aggregation > LACP > Edit LACP Port Setting

| Item | Description |
|---------------|---|
| Port | Selected port list. |
| Port Priority | Enter the LACP priority value of the port |
| Timeout | The periodic transmissions type of LACP PDUs. <ul style="list-style-type: none">● Long: Transmit LACP PDU with slow periodic (30s).● Short: Transmit LACPP DU with fast periodic (1s). |

IV-3-5 EEE

This page allows user to configure Energy Efficient Ethernet settings.

To display the EEE web page, click **Port > EEE**.

EEE Setting Table

Q

| <input type="checkbox"/> | Entry | Port | State | Operational Status |
|--------------------------|-------|------|----------|--------------------|
| <input type="checkbox"/> | 1 | GE1 | Disabled | Disabled |
| <input type="checkbox"/> | 2 | GE2 | Disabled | Disabled |
| <input type="checkbox"/> | 3 | GE3 | Disabled | Disabled |
| <input type="checkbox"/> | 4 | GE4 | Disabled | Disabled |
| <input type="checkbox"/> | 5 | GE5 | Disabled | Disabled |
| <input type="checkbox"/> | 6 | GE6 | Disabled | Disabled |
| <input type="checkbox"/> | 7 | GE7 | Disabled | Disabled |
| <input type="checkbox"/> | 8 | GE8 | Disabled | Disabled |
| <input type="checkbox"/> | 9 | GE9 | Disabled | Disabled |
| <input type="checkbox"/> | 10 | GE10 | Disabled | Disabled |
| <input type="checkbox"/> | 11 | GE11 | Disabled | Disabled |
| <input type="checkbox"/> | 12 | GE12 | Disabled | Disabled |
| <input type="checkbox"/> | 13 | GE13 | Disabled | Disabled |
| <input type="checkbox"/> | 14 | GE14 | Disabled | Disabled |
| <input type="checkbox"/> | 15 | GE15 | Disabled | Disabled |
| <input type="checkbox"/> | 16 | GE16 | Disabled | Disabled |
| <input type="checkbox"/> | 17 | GE17 | Disabled | Disabled |
| <input type="checkbox"/> | 18 | GE18 | Disabled | Disabled |
| <input type="checkbox"/> | 19 | GE19 | Disabled | Disabled |
| <input type="checkbox"/> | 20 | GE20 | Disabled | Disabled |
| <input type="checkbox"/> | 21 | GE21 | Disabled | Disabled |
| <input type="checkbox"/> | 22 | GE22 | Disabled | Disabled |
| <input type="checkbox"/> | 23 | GE23 | Disabled | Disabled |
| <input type="checkbox"/> | 24 | GE24 | Disabled | Disabled |
| <input type="checkbox"/> | 25 | GE25 | Disabled | Disabled |
| <input type="checkbox"/> | 26 | GE26 | Disabled | Disabled |
| <input type="checkbox"/> | 27 | GE27 | Disabled | Disabled |
| <input type="checkbox"/> | 28 | GE28 | Disabled | Disabled |

Figure 32 - Port > EEE

| Item | Description |
|--------------------|--|
| Port | Port Name. |
| State | Port EEE admin state <ul style="list-style-type: none"> ● Enabled: EEE is enabled. ● Disabled: EEE is disabled. |
| Operational Status | Port EEE operational status <ul style="list-style-type: none"> ● Enabled: EEE is operating. ● Disabled: EEE is no operating. |

Click **“Edit”** to edit the EEE menu.

Figure 33 - Port > EEE > Edit EEE Setting

| Item | Description |
|-------|---|
| Port | Port Name |
| State | Port EEE admin state <ul style="list-style-type: none"> ● Enabled: EEE is enabled. ● Disabled: EEE is disabled. |

IV-3-6 Jumbo Frame

This page allows user to configure switch jumbo frame size.

To display Jumbo Frame web page, click **Port > Jumbo Frame**.

Figure 34 - Port > Jumbo Frame

| Item | Description |
|-------------|--|
| Jumbo Frame | Enable or disable jumbo frame. When jumbo frame is enabled, switch max frame size is allowed to configure. When jumbo frame is disabled, default frame size 1522 will be used. |

IV-4 VLAN

A virtual local area network, virtual LAN or VLAN, is a group of hosts with a common set of requirements that communicate as if they were attached to the same broadcast domain, regardless of their physical location. A VLAN has the same attributes as a physical local area network (LAN), but it allows for end stations to be grouped together even if they are not located on the same network switch. VLAN membership can be configured through software instead of physically relocating devices or connections.

IV-4-1 VLAN

Use the VLAN pages to configure settings of VLAN.

IV-4-1-1 Create VLAN

This page allows user to add or delete VLAN ID entries and browser all VLAN entries that add statically or dynamic learned by GVRP. Each VLAN entry has a unique name, user can edit VLAN name in edit page.

To display Create VLAN page, click **VLAN > VLAN > Create VLAN**.

The screenshot shows the 'Create VLAN' interface. On the left, under 'Available VLAN', there is a list of VLANs: VLAN 2, VLAN 3, VLAN 4, VLAN 5, VLAN 6, VLAN 7, VLAN 8, and VLAN 9. On the right, under 'Created VLAN', there is a list containing 'VLAN 1'. Between the two lists are right and left arrow buttons. Below the 'Available VLAN' list is an 'Apply' button. Below the 'Created VLAN' list is another 'Apply' button. Underneath these is a 'VLAN Table' section. It includes a search bar and the text 'Showing 1 to 1 of 1 entries'. The table has columns for 'VLAN', 'Name', and 'Type'. The first row shows '1', 'default', and 'Default'. Below the table are 'Edit' and 'Delete' buttons. At the bottom right of the table are pagination buttons: 'First', 'Previous', '1', 'Next', and 'Last'.

Figure 35 - VLAN > VLAN > Create VLAN

| Item | Description |
|----------------|--|
| Available VLAN | VLAN has not created yet. Select available VLANs from left box then move to right box to add. |

| | |
|--------------|--|
| Created VLAN | VLAN had been created. Select created VLANs from right box then move to left box to delete |
| VLAN | The VLAN ID. |
| Name | The VLAN Name. |
| Type | The VLAN Type. <ul style="list-style-type: none"> ● Static: Port base VLAN. ● Dynamic: 802.1q VLAN. |

Click “**Edit**” button to view Edit VLAN Name menu.

Figure 36 - VLAN > VLAN > Create VLAN > Edit VLAN Name

| Item | Description |
|------|------------------|
| Name | Input VLAN name. |

IV-4-1-2 VLAN Configuration

This page allows user to configure the membership for each port of selected VLAN.

To display VLAN Configuration page, click **VLAN > VLAN > VLAN Configuration**.

VLAN Configuration Table

VLAN

| Entry | Port | Mode | Membership | | | | PVID |
|-------|------|-------|--------------------------------|---------------------------------|------------------------------|---|-------------------------------------|
| 1 | GE1 | Trunk | <input type="radio"/> Excluded | <input type="radio"/> Forbidden | <input type="radio"/> Tagged | <input checked="" type="radio"/> Untagged | <input checked="" type="checkbox"/> |
| 2 | GE2 | Trunk | <input type="radio"/> Excluded | <input type="radio"/> Forbidden | <input type="radio"/> Tagged | <input checked="" type="radio"/> Untagged | <input checked="" type="checkbox"/> |
| 3 | GE3 | Trunk | <input type="radio"/> Excluded | <input type="radio"/> Forbidden | <input type="radio"/> Tagged | <input checked="" type="radio"/> Untagged | <input checked="" type="checkbox"/> |
| 4 | GE4 | Trunk | <input type="radio"/> Excluded | <input type="radio"/> Forbidden | <input type="radio"/> Tagged | <input checked="" type="radio"/> Untagged | <input checked="" type="checkbox"/> |
| 5 | GE5 | Trunk | <input type="radio"/> Excluded | <input type="radio"/> Forbidden | <input type="radio"/> Tagged | <input checked="" type="radio"/> Untagged | <input checked="" type="checkbox"/> |
| 6 | GE6 | Trunk | <input type="radio"/> Excluded | <input type="radio"/> Forbidden | <input type="radio"/> Tagged | <input checked="" type="radio"/> Untagged | <input checked="" type="checkbox"/> |
| 7 | GE7 | Trunk | <input type="radio"/> Excluded | <input type="radio"/> Forbidden | <input type="radio"/> Tagged | <input checked="" type="radio"/> Untagged | <input checked="" type="checkbox"/> |
| 8 | GE8 | Trunk | <input type="radio"/> Excluded | <input type="radio"/> Forbidden | <input type="radio"/> Tagged | <input checked="" type="radio"/> Untagged | <input checked="" type="checkbox"/> |
| 9 | GE9 | Trunk | <input type="radio"/> Excluded | <input type="radio"/> Forbidden | <input type="radio"/> Tagged | <input checked="" type="radio"/> Untagged | <input checked="" type="checkbox"/> |
| 10 | GE10 | Trunk | <input type="radio"/> Excluded | <input type="radio"/> Forbidden | <input type="radio"/> Tagged | <input checked="" type="radio"/> Untagged | <input checked="" type="checkbox"/> |
| 11 | GE11 | Trunk | <input type="radio"/> Excluded | <input type="radio"/> Forbidden | <input type="radio"/> Tagged | <input checked="" type="radio"/> Untagged | <input checked="" type="checkbox"/> |
| 12 | GE12 | Trunk | <input type="radio"/> Excluded | <input type="radio"/> Forbidden | <input type="radio"/> Tagged | <input checked="" type="radio"/> Untagged | <input checked="" type="checkbox"/> |
| 13 | GE13 | Trunk | <input type="radio"/> Excluded | <input type="radio"/> Forbidden | <input type="radio"/> Tagged | <input checked="" type="radio"/> Untagged | <input checked="" type="checkbox"/> |
| 14 | GE14 | Trunk | <input type="radio"/> Excluded | <input type="radio"/> Forbidden | <input type="radio"/> Tagged | <input checked="" type="radio"/> Untagged | <input checked="" type="checkbox"/> |
| 15 | GE15 | Trunk | <input type="radio"/> Excluded | <input type="radio"/> Forbidden | <input type="radio"/> Tagged | <input checked="" type="radio"/> Untagged | <input checked="" type="checkbox"/> |
| 16 | GE16 | Trunk | <input type="radio"/> Excluded | <input type="radio"/> Forbidden | <input type="radio"/> Tagged | <input checked="" type="radio"/> Untagged | <input checked="" type="checkbox"/> |
| 17 | GE17 | Trunk | <input type="radio"/> Excluded | <input type="radio"/> Forbidden | <input type="radio"/> Tagged | <input checked="" type="radio"/> Untagged | <input checked="" type="checkbox"/> |
| 18 | GE18 | Trunk | <input type="radio"/> Excluded | <input type="radio"/> Forbidden | <input type="radio"/> Tagged | <input checked="" type="radio"/> Untagged | <input checked="" type="checkbox"/> |
| 19 | GE19 | Trunk | <input type="radio"/> Excluded | <input type="radio"/> Forbidden | <input type="radio"/> Tagged | <input checked="" type="radio"/> Untagged | <input checked="" type="checkbox"/> |
| 20 | GE20 | Trunk | <input type="radio"/> Excluded | <input type="radio"/> Forbidden | <input type="radio"/> Tagged | <input checked="" type="radio"/> Untagged | <input checked="" type="checkbox"/> |
| 21 | GE21 | Trunk | <input type="radio"/> Excluded | <input type="radio"/> Forbidden | <input type="radio"/> Tagged | <input checked="" type="radio"/> Untagged | <input checked="" type="checkbox"/> |
| 22 | GE22 | Trunk | <input type="radio"/> Excluded | <input type="radio"/> Forbidden | <input type="radio"/> Tagged | <input checked="" type="radio"/> Untagged | <input checked="" type="checkbox"/> |
| 23 | GE23 | Trunk | <input type="radio"/> Excluded | <input type="radio"/> Forbidden | <input type="radio"/> Tagged | <input checked="" type="radio"/> Untagged | <input checked="" type="checkbox"/> |
| 24 | GE24 | Trunk | <input type="radio"/> Excluded | <input type="radio"/> Forbidden | <input type="radio"/> Tagged | <input checked="" type="radio"/> Untagged | <input checked="" type="checkbox"/> |
| 25 | GE25 | Trunk | <input type="radio"/> Excluded | <input type="radio"/> Forbidden | <input type="radio"/> Tagged | <input checked="" type="radio"/> Untagged | <input checked="" type="checkbox"/> |
| 26 | GE26 | Trunk | <input type="radio"/> Excluded | <input type="radio"/> Forbidden | <input type="radio"/> Tagged | <input checked="" type="radio"/> Untagged | <input checked="" type="checkbox"/> |
| 27 | GE27 | Trunk | <input type="radio"/> Excluded | <input type="radio"/> Forbidden | <input type="radio"/> Tagged | <input checked="" type="radio"/> Untagged | <input checked="" type="checkbox"/> |
| 28 | GE28 | Trunk | <input type="radio"/> Excluded | <input type="radio"/> Forbidden | <input type="radio"/> Tagged | <input checked="" type="radio"/> Untagged | <input checked="" type="checkbox"/> |
| 29 | LAG1 | Trunk | <input type="radio"/> Excluded | <input type="radio"/> Forbidden | <input type="radio"/> Tagged | <input checked="" type="radio"/> Untagged | <input checked="" type="checkbox"/> |

Figure 37 - VLAN > VLAN > VLAN Configuration

| Item | Description |
|------------|---|
| VLAN | Select specified VLAN ID to configure VLAN configuration. |
| Port | Display the interface of port entry. |
| Mode | Display the interface VLAN mode of port. |
| Membership | Select the membership for this port of the specified VLAN ID. <input checked="" type="radio"/> Forbidden: Specify the port is forbidden in the VLAN. |

| | |
|------|---|
| | <ul style="list-style-type: none"> ● Excluded: Specify the port is excluded in the VLAN. ● Tagged: Specify the port is tagged member in the VLAN. ● Untagged: Specify the port is untagged member in the VLAN. |
| PVID | Display if it is PVID of interface. |

IV-4-1-3 Membership

This page allows user to view membership information for each port and edit membership for specified interface.

To display Membership page, click **VLAN > VLAN > Membership**.

Membership Table

| Entry | Port | Mode | Administrative VLAN | Operational VLAN |
|--------------------------|------|-------|---------------------|------------------|
| <input type="radio"/> 1 | GE1 | Trunk | 1UP | 1UP |
| <input type="radio"/> 2 | GE2 | Trunk | 1UP | 1UP |
| <input type="radio"/> 3 | GE3 | Trunk | 1UP | 1UP |
| <input type="radio"/> 4 | GE4 | Trunk | 1UP | 1UP |
| <input type="radio"/> 5 | GE5 | Trunk | 1UP | 1UP |
| <input type="radio"/> 6 | GE6 | Trunk | 1UP | 1UP |
| <input type="radio"/> 7 | GE7 | Trunk | 1UP | 1UP |
| <input type="radio"/> 8 | GE8 | Trunk | 1UP | 1UP |
| <input type="radio"/> 9 | GE9 | Trunk | 1UP | 1UP |
| <input type="radio"/> 10 | GE10 | Trunk | 1UP | 1UP |
| <input type="radio"/> 11 | GE11 | Trunk | 1UP | 1UP |
| <input type="radio"/> 12 | GE12 | Trunk | 1UP | 1UP |
| <input type="radio"/> 13 | GE13 | Trunk | 1UP | 1UP |
| <input type="radio"/> 14 | GE14 | Trunk | 1UP | 1UP |
| <input type="radio"/> 15 | GE15 | Trunk | 1UP | 1UP |
| <input type="radio"/> 16 | GE16 | Trunk | 1UP | 1UP |
| <input type="radio"/> 17 | GE17 | Trunk | 1UP | 1UP |
| <input type="radio"/> 18 | GE18 | Trunk | 1UP | 1UP |
| <input type="radio"/> 19 | GE19 | Trunk | 1UP | 1UP |
| <input type="radio"/> 20 | GE20 | Trunk | 1UP | 1UP |
| <input type="radio"/> 21 | GE21 | Trunk | 1UP | 1UP |
| <input type="radio"/> 22 | GE22 | Trunk | 1UP | 1UP |
| <input type="radio"/> 23 | GE23 | Trunk | 1UP | 1UP |
| <input type="radio"/> 24 | GE24 | Trunk | 1UP | 1UP |
| <input type="radio"/> 25 | GE25 | Trunk | 1UP | 1UP |
| <input type="radio"/> 26 | GE26 | Trunk | 1UP | 1UP |
| <input type="radio"/> 27 | GE27 | Trunk | 1UP | 1UP |
| <input type="radio"/> 28 | GE28 | Trunk | 1UP | 1UP |
| <input type="radio"/> 29 | LAG1 | Trunk | 1UP | 1UP |
| <input type="radio"/> 30 | LAG2 | Trunk | 1UP | 1UP |

Figure 38 - VLAN > VLAN > Membership

| Item | Description |
|---------------------|---|
| Port | Display the interface of port entry. |
| Mode | Display the interface VLAN mode of port. |
| Administrative VLAN | Display the administrative VLAN list of this port. |
| Operational VLAN | Display the operational VLAN list of this port. Operational VLAN means the VLAN status that really runs in device. It may different to administrative VLAN. |

Click "**Edit**" button to view the Edit Port Setting menu

Figure 39 - VLAN > VLAN > Membership > Edit Port Setting

| Item | Description |
|------------|--|
| Port | Display the interface. |
| Mode | Display the VLAN mode of interface. |
| Membership | <p>Select VLANs of left box and select one of following membership then move to right box to add membership. Select VLANs of right box then move to left box to remove membership. Tagging membership may not choose in differ VLAN port mode. Select the time source.</p> <ul style="list-style-type: none"> ● Forbidden: Set VLAN as forbidden VLAN. ● Excluded: This option is always disabled. ● Tagged: Set VLAN as tagged VLAN. ● Untagged: Set VLAN as untagged VLAN. ● PVID: Check this checkbox to select the VLAN ID to be the port-based |

| | |
|--|---|
| | VLAN ID for this port. PVID may auto select or can't select in differ settings. |
|--|---|

IV-4-1-4 Port Setting

This page allows user to configure ports VLAN settings such as VLAN port mode, PVID etc...The attributes depend on different VLAN port mode.

To display Port Setting page, click **VLAN > VLAN > Port Setting**.

Port Setting Table

Q

| <input type="checkbox"/> | Entry | Port | Mode | PVID | Accept Frame Type | Ingress Filtering | Uplink | TPID |
|--------------------------|-------|------|-------|------|-------------------|-------------------|----------|--------|
| <input type="checkbox"/> | 1 | GE1 | Trunk | 1 | All | Enabled | Disabled | 0x8100 |
| <input type="checkbox"/> | 2 | GE2 | Trunk | 1 | All | Enabled | Disabled | 0x8100 |
| <input type="checkbox"/> | 3 | GE3 | Trunk | 1 | All | Enabled | Disabled | 0x8100 |
| <input type="checkbox"/> | 4 | GE4 | Trunk | 1 | All | Enabled | Disabled | 0x8100 |
| <input type="checkbox"/> | 5 | GE5 | Trunk | 1 | All | Enabled | Disabled | 0x8100 |
| <input type="checkbox"/> | 6 | GE6 | Trunk | 1 | All | Enabled | Disabled | 0x8100 |
| <input type="checkbox"/> | 7 | GE7 | Trunk | 1 | All | Enabled | Disabled | 0x8100 |
| <input type="checkbox"/> | 8 | GE8 | Trunk | 1 | All | Enabled | Disabled | 0x8100 |
| <input type="checkbox"/> | 9 | GE9 | Trunk | 1 | All | Enabled | Disabled | 0x8100 |
| <input type="checkbox"/> | 10 | GE10 | Trunk | 1 | All | Enabled | Disabled | 0x8100 |
| <input type="checkbox"/> | 11 | GE11 | Trunk | 1 | All | Enabled | Disabled | 0x8100 |
| <input type="checkbox"/> | 12 | GE12 | Trunk | 1 | All | Enabled | Disabled | 0x8100 |
| <input type="checkbox"/> | 13 | GE13 | Trunk | 1 | All | Enabled | Disabled | 0x8100 |
| <input type="checkbox"/> | 14 | GE14 | Trunk | 1 | All | Enabled | Disabled | 0x8100 |
| <input type="checkbox"/> | 15 | GE15 | Trunk | 1 | All | Enabled | Disabled | 0x8100 |
| <input type="checkbox"/> | 16 | GE16 | Trunk | 1 | All | Enabled | Disabled | 0x8100 |
| <input type="checkbox"/> | 17 | GE17 | Trunk | 1 | All | Enabled | Disabled | 0x8100 |
| <input type="checkbox"/> | 18 | GE18 | Trunk | 1 | All | Enabled | Disabled | 0x8100 |
| <input type="checkbox"/> | 19 | GE19 | Trunk | 1 | All | Enabled | Disabled | 0x8100 |
| <input type="checkbox"/> | 20 | GE20 | Trunk | 1 | All | Enabled | Disabled | 0x8100 |
| <input type="checkbox"/> | 21 | GE21 | Trunk | 1 | All | Enabled | Disabled | 0x8100 |
| <input type="checkbox"/> | 22 | GE22 | Trunk | 1 | All | Enabled | Disabled | 0x8100 |
| <input type="checkbox"/> | 23 | GE23 | Trunk | 1 | All | Enabled | Disabled | 0x8100 |
| <input type="checkbox"/> | 24 | GE24 | Trunk | 1 | All | Enabled | Disabled | 0x8100 |
| <input type="checkbox"/> | 25 | GE25 | Trunk | 1 | All | Enabled | Disabled | 0x8100 |
| <input type="checkbox"/> | 26 | GE26 | Trunk | 1 | All | Enabled | Disabled | 0x8100 |
| <input type="checkbox"/> | 27 | GE27 | Trunk | 1 | All | Enabled | Disabled | 0x8100 |
| <input type="checkbox"/> | 28 | GE28 | Trunk | 1 | All | Enabled | Disabled | 0x8100 |
| <input type="checkbox"/> | 29 | LAG1 | Trunk | 1 | All | Enabled | Disabled | 0x8100 |
| <input type="checkbox"/> | 30 | LAG2 | Trunk | 1 | All | Enabled | Disabled | 0x8100 |

Figure 40 - VLAN > VLAN > Port Setting

| Item | Description |
|-------------------|---|
| Port | Display the interface. |
| Mode | Display the VLAN mode of interface. |
| PVID | Display the Port-based VLAN ID of port. |
| Accept Frame Type | Display accept frame type of port. |
| Ingress Filtering | Display ingress filter status of port. |
| Uplink | Display uplink status. |
| TPID | Display TPID used of interface. |

Click “Edit” button to Edit Port Setting menu.

Figure 41 - VLAN > VLAN > Port Setting > Edit Port Setting

| Item | Description |
|---------------|--|
| Port | Display selected port to be edited. |
| Mode | Select the VLAN mode of the interface. <ul style="list-style-type: none"> ● Forbidden: Set VLAN as forbidden VLAN. ● Hybrid: Support all functions as defined in IEEE 802.1Q specification. ● Access: Accepts only untagged frames and join an untagged VLAN. ● Trunk: An untagged member of one VLAN at most, and is a tagged member of zero or more VLANs. |
| PVID | Specify the port-based VLAN ID (1-4094). It's only available with Hybrid and Trunk mode. |
| Accepted Type | Specify the acceptable-frame-type of the specified interfaces. It's only available with Hybrid mode. |
| Ingress | Set checkbox to enable/disable ingress filtering. It's only available with |

| | |
|-----------|--|
| Filtering | Hybrid mode. |
| Uplink | Set checkbox to enable/disable uplink mode. It's only available with trunk mode. |
| TPID | Select TPID used of interface. It's only available with trunk mode. |

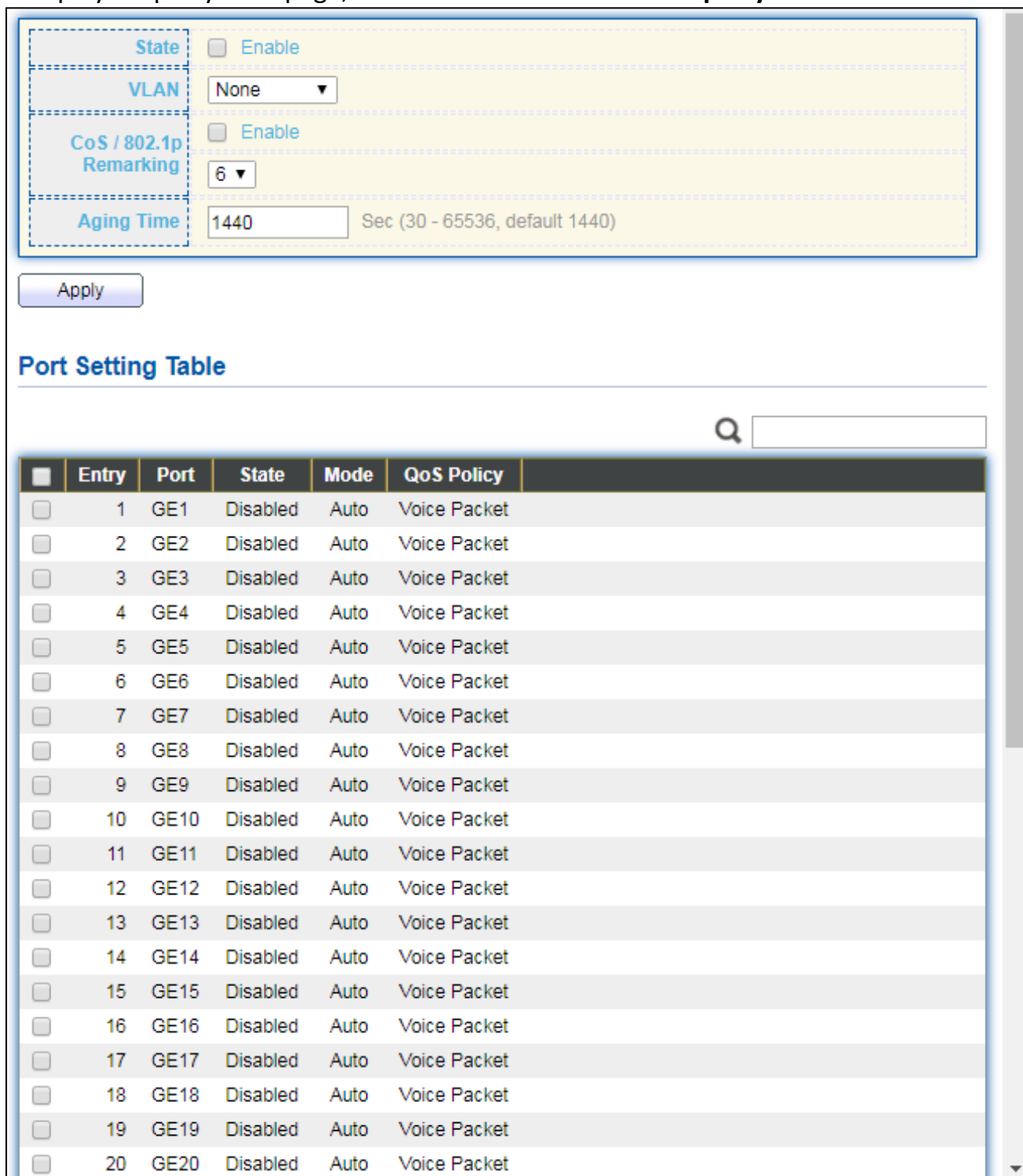
IV-4-2 Voice VLAN

Use the Voice VLAN pages to configure settings of Voice VLAN.

IV-4-2-1 Property

This page allows user to configure global and per interface settings of voice VLAN.

To display Property Web page, click **VLAN > Voice VLAN > Property**.



The screenshot displays the configuration interface for Voice VLAN. It includes a configuration panel with the following settings:

- State:** Enable
- VLAN:** None (dropdown menu)
- CoS / 802.1p Remarking:** Enable, 6 (dropdown menu)
- Aging Time:** 1440 (text input), Sec (30 - 65536, default 1440)

An **Apply** button is located below the configuration panel.

Port Setting Table

Search:

| Entry | Port | State | Mode | QoS Policy | |
|--------------------------|------|-------|----------|------------|--------------|
| <input type="checkbox"/> | 1 | GE1 | Disabled | Auto | Voice Packet |
| <input type="checkbox"/> | 2 | GE2 | Disabled | Auto | Voice Packet |
| <input type="checkbox"/> | 3 | GE3 | Disabled | Auto | Voice Packet |
| <input type="checkbox"/> | 4 | GE4 | Disabled | Auto | Voice Packet |
| <input type="checkbox"/> | 5 | GE5 | Disabled | Auto | Voice Packet |
| <input type="checkbox"/> | 6 | GE6 | Disabled | Auto | Voice Packet |
| <input type="checkbox"/> | 7 | GE7 | Disabled | Auto | Voice Packet |
| <input type="checkbox"/> | 8 | GE8 | Disabled | Auto | Voice Packet |
| <input type="checkbox"/> | 9 | GE9 | Disabled | Auto | Voice Packet |
| <input type="checkbox"/> | 10 | GE10 | Disabled | Auto | Voice Packet |
| <input type="checkbox"/> | 11 | GE11 | Disabled | Auto | Voice Packet |
| <input type="checkbox"/> | 12 | GE12 | Disabled | Auto | Voice Packet |
| <input type="checkbox"/> | 13 | GE13 | Disabled | Auto | Voice Packet |
| <input type="checkbox"/> | 14 | GE14 | Disabled | Auto | Voice Packet |
| <input type="checkbox"/> | 15 | GE15 | Disabled | Auto | Voice Packet |
| <input type="checkbox"/> | 16 | GE16 | Disabled | Auto | Voice Packet |
| <input type="checkbox"/> | 17 | GE17 | Disabled | Auto | Voice Packet |
| <input type="checkbox"/> | 18 | GE18 | Disabled | Auto | Voice Packet |
| <input type="checkbox"/> | 19 | GE19 | Disabled | Auto | Voice Packet |
| <input type="checkbox"/> | 20 | GE20 | Disabled | Auto | Voice Packet |

Figure 42 - VLAN > Voice VLAN > Property

| Item | Description |
|--------------------|--|
| State | Set checkbox to enable or disable voice VLAN function. |
| VLAN | Select Voice VLAN ID. Voice VLAN ID cannot be default VLAN. |
| Cos/802.1p | Select a value of VPT. Qualified packets will use this VPT value as inner priority. |
| Remarking | Set checkbox to enable or disable 1p remarking. If enabled, qualified packets will be remark by this value. |
| Aging Time | Input value of aging time. Default is 1440 minutes. A voice VLAN entry will be age out after this time if without any packet pass through. |
| Port Setting Table | |
| Port | Display port entry. |
| State | Display enable/disabled status of interface. |
| Mode | Display voice VLAN mode. |
| QoS Policy | Display voice VLAN remark will effect which kind of packet. |

Click “**Edit**” button to view Edit Port Setting menu.

Figure 43 - VLAN > Voice VLAN > Property > Edit Port Setting

| Item | Description |
|------------|---|
| Port | Display selected port to be edited. |
| State | Set checkbox to enable/disabled voice VLAN function of interface. |
| Mode | Select port voice VLAN mode <ul style="list-style-type: none"> ● Auto: Voice VLAN auto detect packets that match OUI table and add received port into voice VLAN ID tagged member. ● Manual: User need add interface to VLAN ID tagged member manually. |
| QoS Policy | Select port QoS Policy mode <ul style="list-style-type: none"> ● Voice Packet: QoS attributes are applied to packets with OUIs in the source MAC address. ● All: QoS attributes are applied to packets that are classified to Voice VLAN. |

IV-4-2-2 Voice OUI

This page allows user to add, edit or delete OUI MAC addresses. Default has 8 pre-defined OUI MAC.

To display the Voice OUI Web page, click **VLAN > Voice VLAN > Voice OUI**.

Voice OUI Table

Showing entries Showing 1 to 8 of 8 entries

| <input type="checkbox"/> | OUI | Description |
|--------------------------|----------|-------------|
| <input type="checkbox"/> | 00:E0:BB | 3COM |
| <input type="checkbox"/> | 00:03:6B | Cisco |
| <input type="checkbox"/> | 00:E0:75 | Veritel |
| <input type="checkbox"/> | 00:D0:1E | Pingtel |
| <input type="checkbox"/> | 00:01:E3 | Siemens |
| <input type="checkbox"/> | 00:60:B9 | NEC/Philips |
| <input type="checkbox"/> | 00:0F:E2 | H3C |
| <input type="checkbox"/> | 00:09:6E | Avaya |

Figure 44 - VLAN > Voice VLAN > Voice OUI

| Item | Description |
|-------------|-----------------------------------|
| OUI | Display OUI MAC address. |
| Description | Display description of OUI entry. |

Click “Add” or “Edit” button to Add/Edit Voice OUI menu.

Add Voice OUI

OUI: : :

Description:

Edit Voice OUI

OUI: 00:03:6B

Description:

Figure 45 - VLAN > Voice VLAN > Voice OUI > Add/Edit Voice OUI

| Item | Description |
|-------------|---|
| OUI | Input OUI MAC address. Can't be edited in edit dialog. |
| Description | Input description of the specified MAC address to the voice VLAN OUI table. |

IV-4-3 MAC VLAN

Use the MAC VLAN pages to configure settings of MAC VLAN.

IV-4-3-1 MAC Group

This page allows user to add or edit groups settings of MAC VLAN.

To display the MAC page , click **VLAN > MAC VLAN > MAC Group**.

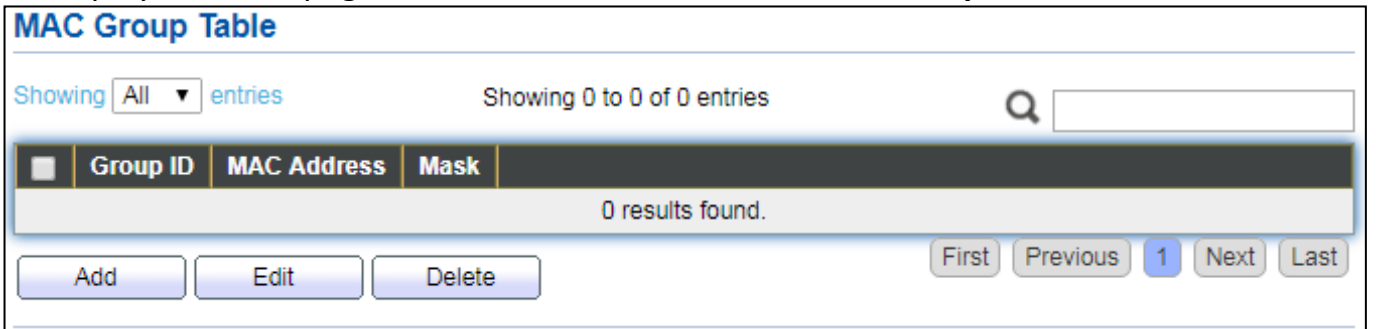


Figure 46 - VLAN > MAC VLAN > MAC Group

| Item | Description |
|-------------|--|
| Group ID | Display group ID of entry. |
| MAC Address | Display mac address of entry. |
| Mask | Display mask of mac address for classified packet. |

Click **"Add"** button or **"Edit"** button to view Add/Edit MAC menu.

Add MAC Group

Group ID

MAC Address

Mask

Edit MAC Group

Group ID

MAC Address

Mask

Figure 47 - VLAN > MAC VLAN > MAC Group > Add/Edit MAC

| Item | Description |
|-------------|--|
| Group ID | Input group ID that is a unique ID of mac group entry. The range from 1 to 2147483647. Only available on Add Dialog. |
| MAC Address | Input mac address for classifying packets. |
| Mask | Input mask of mac address. |

IV-4-3-2 Group Binding

This page allows user to bind MAC VLAN group to each port with VLAN ID.

To display Group Binding page, click **VLAN > MAC VLAN > Group Binding**.

Group Binding Table

Showing All entries
Showing 0 to 0 of 0 entries

| Port | Group ID | VLAN |
|------------------|----------|------|
| 0 results found. | | |

Figure 48 - VLAN > MAC VLAN > Group Binding

| Item | Description |
|----------|---|
| Port | Display port ID that binding with MAC group entry. |
| Group ID | Display group ID that port binding with. |
| VLAN | Display VLAN ID that assign to packets which match MAC group. |

Click “Add” or “Edit” button to view the Add/Edit Group Binding menu.

Add Group Binding

Port

Available Port

Selected Port

➤

➤

➤

➤

Note: Only VLAN Hybrid port can be set MAC VLAN

Group ID

None ▼

VLAN

(1 - 4094)

Apply

Close

Edit Group Binding

Port

Group ID

VLAN

(1 - 4094)

Apply

Close

Figure 49 - VLAN > MAC VLAN > Add/Edit Group Binding

| Item | Description |
|----------|--|
| Port | Select ports in left box then move to right to binding with MAC group. Or select ports in right box then move to left to unbind with MAC group. Only interface has hybrid VLAN mode can be selected and bound with protocol group. Only available on Add dialog. |
| Group ID | Select a Group ID to associate with port. Only available on Add dialog. |
| VLAN | Input VLAN ID that will assign to packets which match MAC group. |

IV-5 MAC Address Table

Use the MAC Address Table pages to show dynamic MAC table and configure settings for static MAC entries.

IV-5-1 Dynamic Address

To display the Dynamic Address web page, click **MAC Address Table > Dynamic Address**.

Aging Time Sec (10 - 630, default 300)

Apply

Dynamic Address Table

Showing entries Showing 1 to 1 of 1 entries

| <input type="checkbox"/> | VLAN | MAC Address | Port |
|--------------------------|------|-------------------|------|
| <input type="checkbox"/> | 1 | B8:6B:23:6D:C1:14 | GE28 |

First Previous 1 Next Last

Clear Refresh Add Static Address

Figure 50 - MAC Address Table > Dynamic Address

| Item | Description |
|------------|--|
| Aging Time | The time in seconds that an entry remains in the MAC address table. Its valid range is from 10 to 630 seconds, and the default value is 300 seconds. |

IV-5-2 Static Address

To display the Static Address web page, click **MAC Address Table > Static Address**.

Static Address Table

Showing entries Showing 0 to 0 of 0 entries

| <input type="checkbox"/> | VLAN | MAC Address | Port |
|--------------------------|------|-------------|------|
| 0 results found. | | | |

First Previous 1 Next Last

Add Edit Delete

Figure 51 - MAC Address Table > Static Address

| Item | Description |
|-------------|--|
| MAC Address | The MAC address to which packets will be statically forwarded. |
| VLAN | Specify the VLAN to show or clear MAC entries. |
| Port | Interface or port number. |

IV-5-3 Filtering Address

To display the Filtering Address web page, click **MAC Address Table > Filtering Address**.

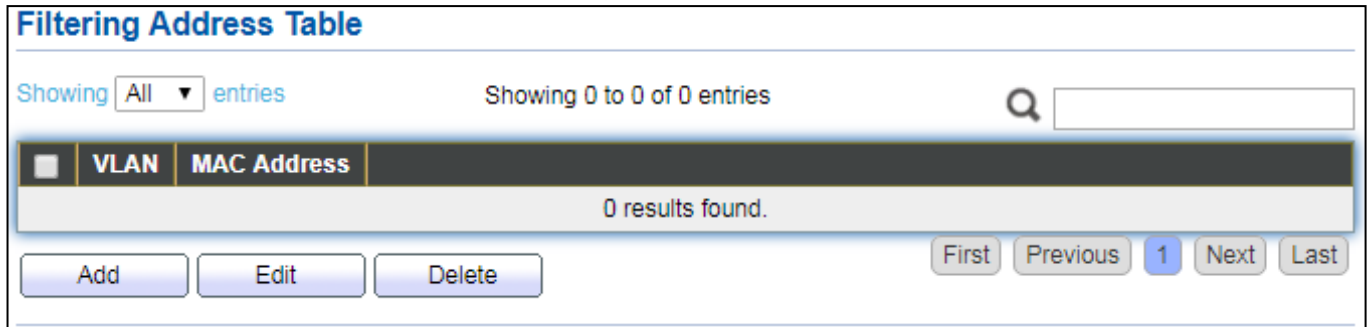


Figure 52 - MAC Address Table > Filtering Address

| Item | Description |
|-------------|---|
| MAC Address | Specify unicast MAC address in the packets to be dropped. |
| VLAN | Specify the VLAN to show or clear MAC entries. |

IV-6 Spanning Tree

The Spanning Tree Protocol (STP) is a network protocol that ensures a loop-free topology for any bridged Ethernet local area network.

IV-6-1 Property

To display the Property web page, click **Spanning Tree > Property**.

| | |
|---------------------------|--|
| State | <input type="checkbox"/> Enable |
| Operation Mode | <input type="radio"/> STP <input checked="" type="radio"/> RSTP <input type="radio"/> MSTP |
| Path Cost | <input checked="" type="radio"/> Long <input type="radio"/> Short |
| BPDU Handling | <input type="radio"/> Filtering <input checked="" type="radio"/> Flooding |
| Priority | <input type="text" value="32768"/> (0 - 61440, default 32768) |
| Hello Time | <input type="text" value="2"/> Sec (1 - 10, default 2) |
| Max Age | <input type="text" value="20"/> Sec (6 - 40, default 20) |
| Forward Delay | <input type="text" value="15"/> Sec (4 - 30, default 15) |
| Tx Hold Count | <input type="text" value="6"/> (1 - 10, default 6) |
| Region Name | <input type="text" value="74:DA:38:17:6E:7A"/> |
| Revision | <input type="text" value="0"/> (0 - 65535, default 0) |
| Max Hop | <input type="text" value="20"/> (1 - 40, default 20) |
| Operational Status | |
| Bridge Identifier | 32768-74:DA:38:17:6E:7A |
| Designated Root Bridge | 0-00:00:00:00:00:00 |
| Root Port | N/A |
| Root Path Cost | 0 |
| Topology Change Count | 0 |
| Last Topology Change | 0D/0H/0M/0S |

Figure 53 - Spanning Tree > Property

| Item | Description |
|----------------------------|---|
| State | Enable/disable the STP on the switch. |
| Operation Mode | Specify the STP operation mode. <ul style="list-style-type: none"> ● STP: Enable the Spanning Tree (STP) operation. ● RSTP: Enable the Rapid Spanning Tree (RSTP) operation. ● MSTP: Enable the Multiple Spanning Tree (MSTP) operation. |
| Path Cost | Specify the path cost method. <ul style="list-style-type: none"> ● Long: Specifies that the default port path costs are within the range: 1-200,000,000. ● Short: Specifies that the default port path costs are within the range: 1-65,535. |
| BPDU Handling | Specify the BPDU forward method when the STP is disabled. <ul style="list-style-type: none"> ● Filtering: Filter the BPDU when STP is disabled. ● Flooding: Flood the BPDU when STP is disabled. |
| Priority | Specify the bridge priority. The valid range is from 0 to 61440, and the value should be the multiple of 4096. It ensures the probability that the switch is selected as the root bridge, and the lower value has the higher priority for the switch to be selected as the root bridge of the topology. |
| Hello Time | Specify the STP hello time in second to broadcast its hello message to other bridges by Designated Ports. Its valid range is from 1 to 10 seconds. |
| Max Age | Specify the time interval in seconds for a switch to wait the configuration messages, without attempting to redefine its own configuration. |
| Forward Delay | Specify the STP forward delay time, which is the amount of time that a port remains in the Listening and Learning states before it enters the Forwarding state. Its valid range is from 4 to 10 seconds. |
| TX Hold Count | Specify the tx-hold-count used to limit the maximum numbers of packets transmission per second. The valid range is from 1 to 10. |
| Region Name | The MSTP instance name. Its maximum length is 32 characters. The default value is the MAC address of the switch. |
| Revision | The MSTP revision number. Its valid range is from 0 to 65535. |
| Max Hop | Specify the number of hops in an MSTP region before the BPDU is discarded. The valid range is 1 to 40. |
| Operational Status | |
| Bridge Identifier | Bridge identifier of the switch. |
| Designated Root Identifier | Bridge identifier of the designated root bridge. |
| Root Port | Operational root port of the switch. |
| Root Path Cost | Operational root path cost. |
| Topology Change Count | Numbers of the topology changes. |

| | |
|----------------------|--|
| Last Topology Change | The last time for the topology change. |
|----------------------|--|

IV-6-2 Port Setting

To configure and display the STP port settings, click **STP > Port Setting**.

Port Setting Table

| Entry | Port | State | Path Cost | Priority | BPDU Filter | BPDU Guard | Operational Edge | Operational Point-to-Point | Port Role | Port State | Designated Bridge | Designated Port ID | Designated Cost |
|-------|------|---------|-----------|----------|-------------|------------|------------------|----------------------------|-----------|------------|---------------------|--------------------|-----------------|
| 1 | GE1 | Enabled | 20000 | 128 | Disabled | Disabled | Disabled | Disabled | Disabled | Disabled | 0-00:00:00:00:00:00 | 128-1 | 20000 |
| 2 | GE2 | Enabled | 20000 | 128 | Disabled | Disabled | Disabled | Disabled | Disabled | Disabled | 0-00:00:00:00:00:00 | 128-2 | 20000 |
| 3 | GE3 | Enabled | 20000 | 128 | Disabled | Disabled | Disabled | Disabled | Disabled | Disabled | 0-00:00:00:00:00:00 | 128-3 | 20000 |
| 4 | GE4 | Enabled | 20000 | 128 | Disabled | Disabled | Disabled | Disabled | Disabled | Disabled | 0-00:00:00:00:00:00 | 128-4 | 20000 |
| 5 | GE5 | Enabled | 20000 | 128 | Disabled | Disabled | Disabled | Disabled | Disabled | Disabled | 0-00:00:00:00:00:00 | 128-5 | 20000 |
| 6 | GE6 | Enabled | 20000 | 128 | Disabled | Disabled | Disabled | Disabled | Disabled | Disabled | 0-00:00:00:00:00:00 | 128-6 | 20000 |
| 7 | GE7 | Enabled | 20000 | 128 | Disabled | Disabled | Disabled | Disabled | Disabled | Disabled | 0-00:00:00:00:00:00 | 128-7 | 20000 |
| 8 | GE8 | Enabled | 20000 | 128 | Disabled | Disabled | Disabled | Disabled | Disabled | Disabled | 0-00:00:00:00:00:00 | 128-8 | 20000 |
| 9 | GE9 | Enabled | 20000 | 128 | Disabled | Disabled | Disabled | Disabled | Disabled | Disabled | 0-00:00:00:00:00:00 | 128-9 | 20000 |
| 10 | GE10 | Enabled | 20000 | 128 | Disabled | Disabled | Disabled | Disabled | Disabled | Disabled | 0-00:00:00:00:00:00 | 128-10 | 20000 |
| 11 | GE11 | Enabled | 20000 | 128 | Disabled | Disabled | Disabled | Disabled | Disabled | Disabled | 0-00:00:00:00:00:00 | 128-11 | 20000 |
| 12 | GE12 | Enabled | 20000 | 128 | Disabled | Disabled | Disabled | Disabled | Disabled | Disabled | 0-00:00:00:00:00:00 | 128-12 | 20000 |
| 13 | GE13 | Enabled | 20000 | 128 | Disabled | Disabled | Disabled | Disabled | Disabled | Disabled | 0-00:00:00:00:00:00 | 128-13 | 20000 |
| 14 | GE14 | Enabled | 20000 | 128 | Disabled | Disabled | Disabled | Disabled | Disabled | Disabled | 0-00:00:00:00:00:00 | 128-14 | 20000 |
| 15 | GE15 | Enabled | 20000 | 128 | Disabled | Disabled | Disabled | Disabled | Disabled | Disabled | 0-00:00:00:00:00:00 | 128-15 | 20000 |
| 16 | GE16 | Enabled | 20000 | 128 | Disabled | Disabled | Disabled | Disabled | Disabled | Disabled | 0-00:00:00:00:00:00 | 128-16 | 20000 |
| 17 | GE17 | Enabled | 20000 | 128 | Disabled | Disabled | Disabled | Disabled | Disabled | Disabled | 0-00:00:00:00:00:00 | 128-17 | 20000 |
| 18 | GE18 | Enabled | 20000 | 128 | Disabled | Disabled | Disabled | Disabled | Disabled | Disabled | 0-00:00:00:00:00:00 | 128-18 | 20000 |
| 19 | GE19 | Enabled | 20000 | 128 | Disabled | Disabled | Disabled | Disabled | Disabled | Disabled | 0-00:00:00:00:00:00 | 128-19 | 20000 |
| 20 | GE20 | Enabled | 20000 | 128 | Disabled | Disabled | Disabled | Disabled | Disabled | Disabled | 0-00:00:00:00:00:00 | 128-20 | 20000 |
| 21 | GE21 | Enabled | 20000 | 128 | Disabled | Disabled | Disabled | Disabled | Disabled | Disabled | 0-00:00:00:00:00:00 | 128-21 | 20000 |
| 22 | GE22 | Enabled | 20000 | 128 | Disabled | Disabled | Disabled | Disabled | Disabled | Disabled | 0-00:00:00:00:00:00 | 128-22 | 20000 |
| 23 | GE23 | Enabled | 20000 | 128 | Disabled | Disabled | Disabled | Disabled | Disabled | Disabled | 0-00:00:00:00:00:00 | 128-23 | 20000 |
| 24 | GE24 | Enabled | 20000 | 128 | Disabled | Disabled | Disabled | Disabled | Disabled | Disabled | 0-00:00:00:00:00:00 | 128-24 | 20000 |
| 25 | GE25 | Enabled | 20000 | 128 | Disabled | Disabled | Disabled | Disabled | Disabled | Disabled | 0-00:00:00:00:00:00 | 128-25 | 20000 |
| 26 | GE26 | Enabled | 20000 | 128 | Disabled | Disabled | Disabled | Disabled | Disabled | Disabled | 0-00:00:00:00:00:00 | 128-26 | 20000 |
| 27 | GE27 | Enabled | 20000 | 128 | Disabled | Disabled | Disabled | Disabled | Disabled | Disabled | 0-00:00:00:00:00:00 | 128-27 | 20000 |
| 28 | GE28 | Enabled | 20000 | 128 | Disabled | Disabled | Disabled | Enabled | Disabled | Forwarding | 0-00:00:00:00:00:00 | 128-28 | 20000 |
| 29 | LAG1 | Enabled | 20000 | 128 | Disabled | Disabled | Disabled | Disabled | Disabled | Disabled | 0-00:00:00:00:00:00 | 128-29 | 20000 |
| 30 | LAG2 | Enabled | 20000 | 128 | Disabled | Disabled | Disabled | Disabled | Disabled | Disabled | 0-00:00:00:00:00:00 | 128-30 | 20000 |
| 31 | LAG3 | Enabled | 20000 | 128 | Disabled | Disabled | Disabled | Disabled | Disabled | Disabled | 0-00:00:00:00:00:00 | 128-31 | 20000 |

Figure 54 - Spanning Tree > Port Setting

| Item | Description |
|----------------------------|--|
| Port | Specify the interface ID or the list of interface IDs. |
| State | The operational state on the specified port. |
| Path Cost | STP path cost on the specified port. |
| Priority | STP priority on the specified port. |
| BPDU Filter | The states of BPDU filter on the specified port. |
| BPDU Guard | The states of BPDU guard on the specified port. |
| Operational Edge | The operational edge port status on the specified port. |
| Operational Point-to-Point | The operational point-to-point status on the specified port. |
| Port Role | The current port role on the specified port. The possible values are: "Disabled", "Master", "Root", "Designated", "Alternative", and "Backup". |
| Port State | The current port state on the specified port. The possible values are: "Disabled", "Discarding", "Learning", and "Forwarding". |
| Designated Bridge | The bridge ID of the designated bridge. |

| | |
|--------------------------|--|
| Designated Port ID | The designated port ID on the switch. |
| Designated Cost | The path cost of the designated port on the switch. |
| Protocol Migration Check | Restart the Spanning Tree Protocol (STP) migration process (re-negotiate with its neighborhood) on the specific interface. |

Click "**Edit**" button to view Edit Port Setting menu.

Edit Port Setting

Port: GE1

State: Enable

Path Cost: (0 - 200000000) (0 = Auto)

Priority: ▼

Edge Port: Enable

BPDU Filter: Enable

BPDU Guard: Enable

Point-to-Point: Auto
 Enable
 Disable

Port State: Disabled

Designated Bridge: 0-00:00:00:00:00:00

Designated Port ID: 128-1

Designated Cost: 20000

Operational Edge: False

Operational Point-to-Point: False

Figure 55 - Spanning Tree > Port Setting > Edit Port Setting

| Item | Description |
|-----------|---|
| Port | Selected port ID. |
| State | Enable/Disable the STP on the specified port. |
| Path Cost | Specify the STP path cost on the specified port. |
| Priority | Specify the STP path cost on the specified port. |
| Edge Port | Specify the edge mode. <ul style="list-style-type: none"> ● Enable: Force to true state (as link to a host). ● Disable: Force to false state (as link to a bridge). |

| | |
|----------------|---|
| | In the edge mode, the interface would be put into the Forwarding state immediately upon link up. If the edge mode is enabled for the interface and there are BPDUs received on the interface, the loop might be occurred in the short time before the STP state change. |
| BPDU Filter | The BPDU Filter configuration avoids receiving / transmitting BPDU from the specified ports. <ul style="list-style-type: none"> ● Enable: Enable BPDU filter function. ● Disable: Disable BPDU filter function. |
| BPDU Guard | The BPDU Guard configuration to drop the received BPDU directly. <ul style="list-style-type: none"> ● Enable: Enable BPDU guard function. ● Disable: Disable BPDU guard function. |
| Point-to-Point | Specify the Point-to-Point port configuration: <ul style="list-style-type: none"> ● Auto: The state is depended on the duplex setting of the port ● Enable: Force to true state. ● Disable: Force to false state |

IV-6-3 MST Instance

To configure MST instance setting, click **STP > MST Instance**.

MST Instance Table

| | MSTI | Priority | Bridge Identifier | Designated Root Bridge | Root Port | Root Path Cost | Remaining Hop | VLAN |
|-----------------------|------|----------|-------------------------|------------------------|-----------|----------------|---------------|--------|
| <input type="radio"/> | 0 | 32768 | 32768-74:DA:38:17:6E:7A | 0-00:00:00:00:00:00 | N/A | 0 | 0 | 1-4094 |
| <input type="radio"/> | 1 | 32768 | 32768-74:DA:38:17:6E:7A | 0-00:00:00:00:00:00 | N/A | 0 | 0 | |
| <input type="radio"/> | 2 | 32768 | 32768-74:DA:38:17:6E:7A | 0-00:00:00:00:00:00 | N/A | 0 | 0 | |
| <input type="radio"/> | 3 | 32768 | 32768-74:DA:38:17:6E:7A | 0-00:00:00:00:00:00 | N/A | 0 | 0 | |
| <input type="radio"/> | 4 | 32768 | 32768-74:DA:38:17:6E:7A | 0-00:00:00:00:00:00 | N/A | 0 | 0 | |
| <input type="radio"/> | 5 | 32768 | 32768-74:DA:38:17:6E:7A | 0-00:00:00:00:00:00 | N/A | 0 | 0 | |
| <input type="radio"/> | 6 | 32768 | 32768-74:DA:38:17:6E:7A | 0-00:00:00:00:00:00 | N/A | 0 | 0 | |
| <input type="radio"/> | 7 | 32768 | 32768-74:DA:38:17:6E:7A | 0-00:00:00:00:00:00 | N/A | 0 | 0 | |
| <input type="radio"/> | 8 | 32768 | 32768-74:DA:38:17:6E:7A | 0-00:00:00:00:00:00 | N/A | 0 | 0 | |
| <input type="radio"/> | 9 | 32768 | 32768-74:DA:38:17:6E:7A | 0-00:00:00:00:00:00 | N/A | 0 | 0 | |
| <input type="radio"/> | 10 | 32768 | 32768-74:DA:38:17:6E:7A | 0-00:00:00:00:00:00 | N/A | 0 | 0 | |
| <input type="radio"/> | 11 | 32768 | 32768-74:DA:38:17:6E:7A | 0-00:00:00:00:00:00 | N/A | 0 | 0 | |
| <input type="radio"/> | 12 | 32768 | 32768-74:DA:38:17:6E:7A | 0-00:00:00:00:00:00 | N/A | 0 | 0 | |
| <input type="radio"/> | 13 | 32768 | 32768-74:DA:38:17:6E:7A | 0-00:00:00:00:00:00 | N/A | 0 | 0 | |
| <input type="radio"/> | 14 | 32768 | 32768-74:DA:38:17:6E:7A | 0-00:00:00:00:00:00 | N/A | 0 | 0 | |
| <input type="radio"/> | 15 | 32768 | 32768-74:DA:38:17:6E:7A | 0-00:00:00:00:00:00 | N/A | 0 | 0 | |

Figure 56 - Spanning Tree > MST Instance

| Item | Description |
|------------------------|--|
| MSTI | Designated port number. |
| Priority | The bridge priority on the specified MSTI. |
| Bridge Identifier | The bridge identifier on the specified MSTI. |
| Designated Root Bridge | The designated root bridge identifier on the specified MSTI. |
| Root Port | The designated root port on the specified MSTI. |
| Root Path Cost | The designated root path cost on the specified MSTI. |
| Remaining Hop | The configuration of remaining hop on the specified MSTI. |
| VLAN | The VLAN configuration on the specified MSTI. |

Click "Edit" button to view Edit MST Instance menu.

Edit MST Instance Setting

MSTI 1

VLAN

Available VLAN: 1, 2, 3, 4, 5, 6, 7, 8

Selected VLAN: [Empty]

Priority: 32768 (0 - 61440, default 32768)

Bridge Identifier: 32768-74:DA:38:17:6E:7A

Designated Root Bridge: 0-00:00:00:00:00:00

Root Port: [Empty]

Root Path Cost: 0

Remaining Hop: 0

Apply Close

Figure 57 - Spanning Tree > MST Instance > Edit MST Instance Setting

| Item | Description |
|----------|--|
| VLAN | Select the VLAN list for the specified MSTI. |
| Priority | Specify the bridge priority on the specified MSTI. The valid range is from 0 to 61440, and the value must be the multiple of 4096. It ensures the probability that the switch is selected as the root bridge, and the lower values has the higher priority for the switch to be selected as the root bridge of the STP topology. |

IV-6-4 MST Port Setting

To configure and display MST port setting, click **STP > MST Port Setting**.

MST Port Setting Table

MSTI

| Entry | Port | Path Cost | Priority | Port Role | Port State | Mode | Type | Designated Bridge | Designated Port ID | Designated Cost | Remaining Hop | |
|--------------------------|------|-----------|----------|-----------|------------|------------|------|-------------------|---------------------|-----------------|---------------|----|
| <input type="checkbox"/> | 1 | GE1 | 20000 | 128 | Disabled | Disabled | RSTP | Boundary | 0-00:00:00:00:00:00 | 128-1 | 20000 | 20 |
| <input type="checkbox"/> | 2 | GE2 | 20000 | 128 | Disabled | Disabled | RSTP | Boundary | 0-00:00:00:00:00:00 | 128-2 | 20000 | 20 |
| <input type="checkbox"/> | 3 | GE3 | 20000 | 128 | Disabled | Disabled | RSTP | Boundary | 0-00:00:00:00:00:00 | 128-3 | 20000 | 20 |
| <input type="checkbox"/> | 4 | GE4 | 20000 | 128 | Disabled | Disabled | RSTP | Boundary | 0-00:00:00:00:00:00 | 128-4 | 20000 | 20 |
| <input type="checkbox"/> | 5 | GE5 | 20000 | 128 | Disabled | Disabled | RSTP | Boundary | 0-00:00:00:00:00:00 | 128-5 | 20000 | 20 |
| <input type="checkbox"/> | 6 | GE6 | 20000 | 128 | Disabled | Disabled | RSTP | Boundary | 0-00:00:00:00:00:00 | 128-6 | 20000 | 20 |
| <input type="checkbox"/> | 7 | GE7 | 20000 | 128 | Disabled | Disabled | RSTP | Boundary | 0-00:00:00:00:00:00 | 128-7 | 20000 | 20 |
| <input type="checkbox"/> | 8 | GE8 | 20000 | 128 | Disabled | Disabled | RSTP | Boundary | 0-00:00:00:00:00:00 | 128-8 | 20000 | 20 |
| <input type="checkbox"/> | 9 | GE9 | 20000 | 128 | Disabled | Disabled | RSTP | Boundary | 0-00:00:00:00:00:00 | 128-9 | 20000 | 20 |
| <input type="checkbox"/> | 10 | GE10 | 20000 | 128 | Disabled | Disabled | RSTP | Boundary | 0-00:00:00:00:00:00 | 128-10 | 20000 | 20 |
| <input type="checkbox"/> | 11 | GE11 | 20000 | 128 | Disabled | Disabled | RSTP | Boundary | 0-00:00:00:00:00:00 | 128-11 | 20000 | 20 |
| <input type="checkbox"/> | 12 | GE12 | 20000 | 128 | Disabled | Disabled | RSTP | Boundary | 0-00:00:00:00:00:00 | 128-12 | 20000 | 20 |
| <input type="checkbox"/> | 13 | GE13 | 20000 | 128 | Disabled | Disabled | RSTP | Boundary | 0-00:00:00:00:00:00 | 128-13 | 20000 | 20 |
| <input type="checkbox"/> | 14 | GE14 | 20000 | 128 | Disabled | Disabled | RSTP | Boundary | 0-00:00:00:00:00:00 | 128-14 | 20000 | 20 |
| <input type="checkbox"/> | 15 | GE15 | 20000 | 128 | Disabled | Disabled | RSTP | Boundary | 0-00:00:00:00:00:00 | 128-15 | 20000 | 20 |
| <input type="checkbox"/> | 16 | GE16 | 20000 | 128 | Disabled | Disabled | RSTP | Boundary | 0-00:00:00:00:00:00 | 128-16 | 20000 | 20 |
| <input type="checkbox"/> | 17 | GE17 | 20000 | 128 | Disabled | Disabled | RSTP | Boundary | 0-00:00:00:00:00:00 | 128-17 | 20000 | 20 |
| <input type="checkbox"/> | 18 | GE18 | 20000 | 128 | Disabled | Disabled | RSTP | Boundary | 0-00:00:00:00:00:00 | 128-18 | 20000 | 20 |
| <input type="checkbox"/> | 19 | GE19 | 20000 | 128 | Disabled | Disabled | RSTP | Boundary | 0-00:00:00:00:00:00 | 128-19 | 20000 | 20 |
| <input type="checkbox"/> | 20 | GE20 | 20000 | 128 | Disabled | Disabled | RSTP | Boundary | 0-00:00:00:00:00:00 | 128-20 | 20000 | 20 |
| <input type="checkbox"/> | 21 | GE21 | 20000 | 128 | Disabled | Disabled | RSTP | Boundary | 0-00:00:00:00:00:00 | 128-21 | 20000 | 20 |
| <input type="checkbox"/> | 22 | GE22 | 20000 | 128 | Disabled | Disabled | RSTP | Boundary | 0-00:00:00:00:00:00 | 128-22 | 20000 | 20 |
| <input type="checkbox"/> | 23 | GE23 | 20000 | 128 | Disabled | Disabled | RSTP | Boundary | 0-00:00:00:00:00:00 | 128-23 | 20000 | 20 |
| <input type="checkbox"/> | 24 | GE24 | 20000 | 128 | Disabled | Disabled | RSTP | Boundary | 0-00:00:00:00:00:00 | 128-24 | 20000 | 20 |
| <input type="checkbox"/> | 25 | GE25 | 20000 | 128 | Disabled | Disabled | RSTP | Boundary | 0-00:00:00:00:00:00 | 128-25 | 20000 | 20 |
| <input type="checkbox"/> | 26 | GE26 | 20000 | 128 | Disabled | Disabled | RSTP | Boundary | 0-00:00:00:00:00:00 | 128-26 | 20000 | 20 |
| <input type="checkbox"/> | 27 | GE27 | 20000 | 128 | Disabled | Disabled | RSTP | Boundary | 0-00:00:00:00:00:00 | 128-27 | 20000 | 20 |
| <input type="checkbox"/> | 28 | GE28 | 20000 | 128 | Disabled | Forwarding | RSTP | Boundary | 0-00:00:00:00:00:00 | 128-28 | 20000 | 20 |
| <input type="checkbox"/> | 29 | LAG1 | 20000 | 128 | Disabled | Disabled | RSTP | Boundary | 0-00:00:00:00:00:00 | 128-29 | 20000 | 20 |
| <input type="checkbox"/> | 30 | LAG2 | 20000 | 128 | Disabled | Disabled | RSTP | Boundary | 0-00:00:00:00:00:00 | 128-30 | 20000 | 20 |

Figure 58 - Spanning Tree > MST Port Setting

| Item | Description |
|------------|---|
| MSTI | Specify the port setting on the specified MSTI. |
| Port | Specify the interface ID or the list of interface IDs. |
| Path Cost | The port path cost on the specified MSTI. |
| Priority | The port priority on the specified MSTI. |
| Port Role | The current port role on the specified port. The possible values are: "Disabled", "Master", "Root", "Designated", "Alternative", and "Backup". |
| Port State | The current port state on the specified port. The possible values are: "Disabled", "Discarding", "Learning", and "Forwarding". |
| Mode | The operational STP mode on the specified port. |
| Type | The possible value for the port type are: <ul style="list-style-type: none"> ● Boundary: The port attaching an MST Bridge to a LAN that is not in the same region. |

| | |
|--------------------|---|
| | <ul style="list-style-type: none"> ● Internal: The port attaching an MST Bridge to a LAN that is not in the same region. |
| Designated Bridge | The bridge ID of the designated bridge. |
| Designated Port ID | The designated port ID on the switch. |
| Designated Cost | The path cost of the designated port on the switch. |
| Remaining Hop | The remaining hops count on the specified port. |

Click "Edit" button to view Edit MST Port Setting menu.

Edit MST Port Setting

| | |
|--------------------|---|
| MSTI | 0 |
| Port | GE1 |
| Path Cost | <input style="width: 150px;" type="text" value="0"/> (0 - 200000000) (0 = Auto) |
| Priority | <input style="width: 50px;" type="text" value="128"/> ▼ |
| Port Role | Disabled |
| Port State | Disabled |
| Mode | RSTP |
| Type | Boundary |
| Designated Bridge | 0-00:00:00:00:00:00 |
| Designated Port ID | 128-1 |
| Designated Cost | 20000 |
| Remaining Hop | 20 |

Figure 59 - Spanning Tree > MST Port Setting > Edit MST Port Setting

| Item | Description |
|-----------|---|
| Path Cost | Specify the STP port path cost on the specified MSTI. |
| Priority | Specify the STP port priority on the specified MSTI. |

IV-6-5 Statistics

To display the STP statistics, click **STP > Statistics**.

Statistics Table

Refresh Rate sec Q

| Entry | Port | Receive BPDU | | | Transmit BPDU | | | |
|--------------------------|------|--------------|-----|------|---------------|-----|------|---|
| | | Config | TCN | MSTP | Config | TCN | MSTP | |
| <input type="checkbox"/> | 1 | GE1 | 0 | 0 | 0 | 0 | 0 | 0 |
| <input type="checkbox"/> | 2 | GE2 | 0 | 0 | 0 | 0 | 0 | 0 |
| <input type="checkbox"/> | 3 | GE3 | 0 | 0 | 0 | 0 | 0 | 0 |
| <input type="checkbox"/> | 4 | GE4 | 0 | 0 | 0 | 0 | 0 | 0 |
| <input type="checkbox"/> | 5 | GE5 | 0 | 0 | 0 | 0 | 0 | 0 |
| <input type="checkbox"/> | 6 | GE6 | 0 | 0 | 0 | 0 | 0 | 0 |
| <input type="checkbox"/> | 7 | GE7 | 0 | 0 | 0 | 0 | 0 | 0 |
| <input type="checkbox"/> | 8 | GE8 | 0 | 0 | 0 | 0 | 0 | 0 |
| <input type="checkbox"/> | 9 | GE9 | 0 | 0 | 0 | 0 | 0 | 0 |
| <input type="checkbox"/> | 10 | GE10 | 0 | 0 | 0 | 0 | 0 | 0 |
| <input type="checkbox"/> | 11 | GE11 | 0 | 0 | 0 | 0 | 0 | 0 |
| <input type="checkbox"/> | 12 | GE12 | 0 | 0 | 0 | 0 | 0 | 0 |
| <input type="checkbox"/> | 13 | GE13 | 0 | 0 | 0 | 0 | 0 | 0 |
| <input type="checkbox"/> | 14 | GE14 | 0 | 0 | 0 | 0 | 0 | 0 |
| <input type="checkbox"/> | 15 | GE15 | 0 | 0 | 0 | 0 | 0 | 0 |
| <input type="checkbox"/> | 16 | GE16 | 0 | 0 | 0 | 0 | 0 | 0 |
| <input type="checkbox"/> | 17 | GE17 | 0 | 0 | 0 | 0 | 0 | 0 |
| <input type="checkbox"/> | 18 | GE18 | 0 | 0 | 0 | 0 | 0 | 0 |
| <input type="checkbox"/> | 19 | GE19 | 0 | 0 | 0 | 0 | 0 | 0 |
| <input type="checkbox"/> | 20 | GE20 | 0 | 0 | 0 | 0 | 0 | 0 |
| <input type="checkbox"/> | 21 | GE21 | 0 | 0 | 0 | 0 | 0 | 0 |
| <input type="checkbox"/> | 22 | GE22 | 0 | 0 | 0 | 0 | 0 | 0 |
| <input type="checkbox"/> | 23 | GE23 | 0 | 0 | 0 | 0 | 0 | 0 |
| <input type="checkbox"/> | 24 | GE24 | 0 | 0 | 0 | 0 | 0 | 0 |
| <input type="checkbox"/> | 25 | GE25 | 0 | 0 | 0 | 0 | 0 | 0 |
| <input type="checkbox"/> | 26 | GE26 | 0 | 0 | 0 | 0 | 0 | 0 |
| <input type="checkbox"/> | 27 | GE27 | 0 | 0 | 0 | 0 | 0 | 0 |
| <input type="checkbox"/> | 28 | GE28 | 0 | 0 | 0 | 0 | 0 | 0 |
| <input type="checkbox"/> | 29 | LAG1 | 0 | 0 | 0 | 0 | 0 | 0 |

Figure 60 - Spanning Tree > Statistics

| Item | Description |
|------------------------|---|
| Refresh Rate | The option to refresh the statistics automatically. |
| Receive BPDU (Config) | The counts of the received CONFIG BPDU. |
| Receive BPDU (TCN) | The counts of the received TCN BPDU. |
| Receive BPDU (MSTP) | The counts of the received MSTP BPDU. |
| Transmit BPDU (Config) | The counts of the transmitted CONFIG BPDU. |
| Transmit BPDU (TCN) | The counts of the transmitted TCN BPDU. |
| Transmit BPDU (MSTP) | The counts of the transmitted MSTP BPDU. |
| Clear | Clear the statistics for the selected interfaces |
| View | View the statistics for the interface. |

Click "**View**" button to view the STP Port Statistic menu.

STP Port Statistic

| | |
|--------------|--|
| Port | GE1 |
| Refresh Rate | <input checked="" type="radio"/> None <input type="radio"/> 5 sec <input type="radio"/> 10 sec <input type="radio"/> 30 sec |

Receive BPDU

| | |
|--------|---|
| Config | 0 |
| TCN | 0 |
| MSTP | 0 |

Transmit BPDU

| | |
|--------|---|
| Config | 0 |
| TCN | 0 |
| MSTP | 0 |

Refresh
Clear
Close

Figure 61 - Spanning Tree > Statistics > STP Port Statistic

| Item | Description |
|--------------|---|
| Refresh Rate | The option to refresh the statistics automatically. |
| Clear | Clear the statistics for the selected interfaces. |

IV-7 Discovery

Use this section to configure LLDP.

IV-7-1 LLDP

LLDP is a one-way protocol; there are no request/response sequences. Information is advertised by stations implementing the transmit function, and is received and processed by stations implementing the receive function. The LLDP category contains LLDP and LLDP-MED pages.

IV-7-1-1 Property

To display LLDP Property Setting web page, click **Discovery > LLDP > Property**.

The screenshot shows the LLDP configuration interface. It is divided into two main sections: LLDP and LLDP-MED. The LLDP section has a 'State' field with a checked 'Enable' checkbox. Below it is the 'LLDP Handling' section with three radio button options: 'Filtering', 'Bridging', and 'Flooding', where 'Flooding' is selected. There are four text input fields for intervals: 'TLV Advertise Interval' (30), 'Hold Multiplier' (4), 'Reinitializing Delay' (2), and 'Transmit Delay' (2). Each input field has a range and default value in parentheses. The LLDP-MED section has one text input field for 'Fast Start Repeat Count' (3). An 'Apply' button is at the bottom left.

Figure 62 - Discovery > LLDP > Property

| Item | Description |
|---------------|--|
| State | Enable/ Disable LLDP protocol on this switch. |
| LLDP Handling | Select LLDP PDU handling action to be filtered, bridging or flooded when LLDP is globally disabled. <ul style="list-style-type: none">● Filtering: Deletes the packet.● Bridging: (VLAN-aware flooding) Forwards the packet to all VLAN members.● Flooding: Forwards the packet to all ports |
| TLV Advertise | Select the interval at which frames are transmitted. The default is 30 |

| | |
|-------------------------|--|
| Interval | seconds, and the valid range is 5–32767 seconds. |
| Holdtime Multiplier | Select the multiplier on the transmit interval to assign to TTL (range 2–10, default = 4). |
| Reinitialization Delay | Select the delay before a re-initialization (range 1–10 seconds, default = 2). |
| Transmit Delay | Select the delay after an LLDP frame is sent (range 1–8191 seconds, default = 3). |
| Fast Start Repeat Count | Select fast start repeat count when port link up (range 1–10, default = 3). |

IV-7-1-2 Port Setting

To display LLDP Port Setting, click **Discovery > LLDP > Port Setting**.

Port Setting Table

| <input type="checkbox"/> | Entry | Port | Mode | Selected TLV |
|--------------------------|-------|------|--------|--------------|
| <input type="checkbox"/> | 1 | GE1 | Normal | 802.1 PVID |
| <input type="checkbox"/> | 2 | GE2 | Normal | 802.1 PVID |
| <input type="checkbox"/> | 3 | GE3 | Normal | 802.1 PVID |
| <input type="checkbox"/> | 4 | GE4 | Normal | 802.1 PVID |
| <input type="checkbox"/> | 5 | GE5 | Normal | 802.1 PVID |
| <input type="checkbox"/> | 6 | GE6 | Normal | 802.1 PVID |
| <input type="checkbox"/> | 7 | GE7 | Normal | 802.1 PVID |
| <input type="checkbox"/> | 8 | GE8 | Normal | 802.1 PVID |
| <input type="checkbox"/> | 9 | GE9 | Normal | 802.1 PVID |
| <input type="checkbox"/> | 10 | GE10 | Normal | 802.1 PVID |
| <input type="checkbox"/> | 11 | GE11 | Normal | 802.1 PVID |
| <input type="checkbox"/> | 12 | GE12 | Normal | 802.1 PVID |
| <input type="checkbox"/> | 13 | GE13 | Normal | 802.1 PVID |
| <input type="checkbox"/> | 14 | GE14 | Normal | 802.1 PVID |
| <input type="checkbox"/> | 15 | GE15 | Normal | 802.1 PVID |
| <input type="checkbox"/> | 16 | GE16 | Normal | 802.1 PVID |
| <input type="checkbox"/> | 17 | GE17 | Normal | 802.1 PVID |
| <input type="checkbox"/> | 18 | GE18 | Normal | 802.1 PVID |
| <input type="checkbox"/> | 19 | GE19 | Normal | 802.1 PVID |
| <input type="checkbox"/> | 20 | GE20 | Normal | 802.1 PVID |
| <input type="checkbox"/> | 21 | GE21 | Normal | 802.1 PVID |
| <input type="checkbox"/> | 22 | GE22 | Normal | 802.1 PVID |
| <input type="checkbox"/> | 23 | GE23 | Normal | 802.1 PVID |
| <input type="checkbox"/> | 24 | GE24 | Normal | 802.1 PVID |
| <input type="checkbox"/> | 25 | GE25 | Normal | 802.1 PVID |
| <input type="checkbox"/> | 26 | GE26 | Normal | 802.1 PVID |
| <input type="checkbox"/> | 27 | GE27 | Normal | 802.1 PVID |
| <input type="checkbox"/> | 28 | GE28 | Normal | 802.1 PVID |

Figure 63 - Discovery > LLDP > Port Setting

| Item | Description |
|--------------|------------------------|
| Port | Port Name. |
| Mode | The port LLDP mode. |
| Selectde TLV | The Selected LLDP TLV. |

Click "Edit" button to view Edit Port Setting menu.

Figure 64 - Discovery > LLDP > Port Setting > Edit Port Setting

| Item | Description |
|--------------|---|
| Port | Select specified port or all ports to configure LLDP state. |
| Mode | Select the transmission state of LLDP port interface. <ul style="list-style-type: none"> ● Disable: Disable the transmission of LLDP PDUs. ● RX Only: Receive LLDP PDUs only. ● TX Only: Transmit LLDP PDUs only. ● TX And RX: Transmit and receive LLDP PDUs both. |
| Optional TLV | Select the LLDP optional TLVs to be carried (multiple selection is allowed). <ul style="list-style-type: none"> ● System Name ● Port Description ● System Description ● System Capability ● 802.3 MAC-PHY ● 802.3 Link Aggregation ● 802.3 Maximum Frame Size ● Management Address ● 802.1 PVID. |

| | |
|-----------------|--|
| 802.1 VLAN Name | Select the VLAN Name ID to be carried (multiple selection is allowed). |
|-----------------|--|

IV-7-1-3 Packet View

To display LLDP Overloading, click **Discovery > LLDP > Packet View**.

Packet View Table

| | Entry | Port | In-Use (Bytes) | Available (Bytes) | Operational Status |
|-----------------------|-------|------|----------------|-------------------|--------------------|
| <input type="radio"/> | 1 | GE1 | 48 | 1440 | Not Overloading |
| <input type="radio"/> | 2 | GE2 | 48 | 1440 | Not Overloading |
| <input type="radio"/> | 3 | GE3 | 48 | 1440 | Not Overloading |
| <input type="radio"/> | 4 | GE4 | 48 | 1440 | Not Overloading |
| <input type="radio"/> | 5 | GE5 | 48 | 1440 | Not Overloading |
| <input type="radio"/> | 6 | GE6 | 48 | 1440 | Not Overloading |
| <input type="radio"/> | 7 | GE7 | 48 | 1440 | Not Overloading |
| <input type="radio"/> | 8 | GE8 | 48 | 1440 | Not Overloading |
| <input type="radio"/> | 9 | GE9 | 48 | 1440 | Not Overloading |
| <input type="radio"/> | 10 | GE10 | 49 | 1439 | Not Overloading |
| <input type="radio"/> | 11 | GE11 | 49 | 1439 | Not Overloading |
| <input type="radio"/> | 12 | GE12 | 49 | 1439 | Not Overloading |
| <input type="radio"/> | 13 | GE13 | 49 | 1439 | Not Overloading |
| <input type="radio"/> | 14 | GE14 | 49 | 1439 | Not Overloading |
| <input type="radio"/> | 15 | GE15 | 49 | 1439 | Not Overloading |
| <input type="radio"/> | 16 | GE16 | 49 | 1439 | Not Overloading |
| <input type="radio"/> | 17 | GE17 | 49 | 1439 | Not Overloading |
| <input type="radio"/> | 18 | GE18 | 49 | 1439 | Not Overloading |
| <input type="radio"/> | 19 | GE19 | 49 | 1439 | Not Overloading |
| <input type="radio"/> | 20 | GE20 | 49 | 1439 | Not Overloading |
| <input type="radio"/> | 21 | GE21 | 49 | 1439 | Not Overloading |
| <input type="radio"/> | 22 | GE22 | 49 | 1439 | Not Overloading |
| <input type="radio"/> | 23 | GE23 | 49 | 1439 | Not Overloading |
| <input type="radio"/> | 24 | GE24 | 49 | 1439 | Not Overloading |
| <input type="radio"/> | 25 | GE25 | 49 | 1439 | Not Overloading |
| <input type="radio"/> | 26 | GE26 | 49 | 1439 | Not Overloading |
| <input type="radio"/> | 27 | GE27 | 49 | 1439 | Not Overloading |
| <input type="radio"/> | 28 | GE28 | 49 | 1439 | Not Overloading |

Figure 65 - Discovery > LLDP > Packet View

| Item | Description |
|--------------------|--|
| Port | Port Name. |
| In-Use (Bytes) | Total number of bytes of LLDP information in each packet. |
| Available (Bytes) | Total number of available bytes left for additional LLDP information in each packet. |
| Operational Status | Overloading or not. |

Click "**Detail**" button to view Packet View Detail menu.

| Packet View Detail | |
|-----------------------------------|-------------|
| Port | GE1 |
| Mandatory TLVs | |
| Size (Bytes) | 21 |
| Operational Status | Transmitted |
| MED Capabilities | |
| Size (Bytes) | 9 |
| Operational Status | Transmitted |
| MED Location | |
| Size (Bytes) | 0 |
| Operational Status | Transmitted |
| MED Network Policy | |
| Size (Bytes) | 10 |
| Operational Status | Transmitted |
| MED Inventory | |
| Size (Bytes) | 0 |
| Operational Status | Transmitted |
| MED Extended Power via MDI | |
| Size (Bytes) | 0 |
| Operational Status | Transmitted |
| 802.3 TLVs | |
| Size (Bytes) | 0 |
| Operational Status | Transmitted |

| Optional TLVs | |
|--------------------|-------------|
| Size (Bytes) | 0 |
| Operational Status | Transmitted |
| 802.1 TLVs | |
| Size (Bytes) | 8 |
| Operational Status | Transmitted |
| Total | |
| In-Use (Bytes) | 48 |
| Available (Bytes) | 1440 |

Figure 66 - Discovery > LLDP > Packet View > Packet View Detail

| Item | Description |
|----------------------------|--|
| Port | Port Name. |
| Mandatory TLVs | Total mandatory TLV byte size. Status is sent or overloading. |
| MED Capabilities | Total MED Capabilities TLV byte size. Status is sent or overloading. |
| MED Location | Total MED Location byte size. Status is sent or overloading. |
| MED Network Policy | Total MED Network Policy byte size. Status is sent or overloading. |
| MED Inventory | Total MED Inventory byte size. Status is sent or overloading. |
| MED Extended Power via MDI | Total MED Extended Power via MDI byte size. Status is sent or overloading. |
| 802.3 TLVs | Total 802.3 TLVs byte size. Status is sent or overloading. |
| Optional TLVs | Total Optional TLV byte size. Status is sent or overloading. |
| 802.1 TLVs | Total 802.1 TLVs byte size. Status is sent or overloading. |
| Total | Total number of bytes of LLDP information in each packet. |

IV-7-1-4 Local Information

Use the LLDP Local Information to view LLDP local device information.

To display LLDP Local Device, click **Discovery > LLDP > Local Information**.

Device Summary

| | |
|------------------------|--|
| Chassis ID Subtype | MAC address |
| Chassis ID | FC:8F:C4:00:00:01 |
| System Name | Switch |
| System Description | 24-Port Gigabit Smart Managed Switch with 4 Gigabit Fiber Port |
| Supported Capabilities | Bridge |
| Enabled Capabilities | Bridge |
| Port ID Subtype | Local |

Port Status Table

| Entry | Port | LLDP State |
|-----------------------|---------|------------|
| <input type="radio"/> | 1 GE1 | Normal |
| <input type="radio"/> | 2 GE2 | Normal |
| <input type="radio"/> | 3 GE3 | Normal |
| <input type="radio"/> | 4 GE4 | Normal |
| <input type="radio"/> | 5 GE5 | Normal |
| <input type="radio"/> | 6 GE6 | Normal |
| <input type="radio"/> | 7 GE7 | Normal |
| <input type="radio"/> | 8 GE8 | Normal |
| <input type="radio"/> | 9 GE9 | Normal |
| <input type="radio"/> | 10 GE10 | Normal |
| <input type="radio"/> | 11 GE11 | Normal |
| <input type="radio"/> | 12 GE12 | Normal |
| <input type="radio"/> | 13 GE13 | Normal |
| <input type="radio"/> | 14 GE14 | Normal |
| <input type="radio"/> | 15 GE15 | Normal |
| <input type="radio"/> | 16 GE16 | Normal |
| <input type="radio"/> | 17 GE17 | Normal |
| <input type="radio"/> | 18 GE18 | Normal |
| <input type="radio"/> | 19 GE19 | Normal |
| <input type="radio"/> | 20 GE20 | Normal |
| <input type="radio"/> | 21 GE21 | Normal |
| <input type="radio"/> | 22 GE22 | Normal |
| <input type="radio"/> | 23 GE23 | Normal |
| <input type="radio"/> | 24 GE24 | Normal |
| <input type="radio"/> | 25 GE25 | Normal |
| <input type="radio"/> | 26 GE26 | Normal |
| <input type="radio"/> | 27 GE27 | Normal |
| <input type="radio"/> | 28 GE28 | Normal |

Figure 67 - Discovery > LLDP > Local Information

| Item | Description |
|------------------------|---|
| Chassis ID Subtype | Type of chassis ID, such as the MAC address. |
| Chassis ID | Identifier of chassis. Where the chassis ID subtype is a MAC address, the MAC address of the switch is displayed. |
| System Name | Name of switch. |
| System Description | Description of the switch. |
| Capabilities Supported | Primary functions of the device, such as Bridge, WLAN AP, or Router. |
| Capabilities | Primary enabled functions of the device. |

| | |
|-----------------|--|
| Enabled | |
| Port ID Subtype | Type of the port identifier that is shown. |
| LLDP Status | LLDP Tx and Rx abilities. |
| LLDP Med Status | LLDP MED enable state. |

Click “**Detail**” button on the page to view detail information of the selected port.

Local Information Detail

| | |
|-------------------------------|--|
| Chassis ID Subtype | MAC address |
| Chassis ID | FC:8F:C4:00:00:01 |
| System Name | Switch |
| System Description | 24-Port Gigabit Smart Managed Switch with 4 Gigabit Fiber Port |
| Supported Capabilities | Bridge |
| Enabled Capabilities | Bridge |
| Port ID | GE1 |
| Port ID Subtype | Local |
| Port Description | |

| Management Address Table | | | |
|--------------------------|---------|-------------------|------------------|
| Address Subtype | Address | Interface Subtype | Interface Number |
| 0 results found. | | | |

| MAC/PHY Detail | |
|---|-----|
| Auto-Negotiation Supported | N/A |
| Auto-Negotiation Enabled | N/A |
| Auto-Negotiation Advertised Capabilities | N/A |
| Operational MAU Type | N/A |

| 802.3 Detail | |
|---------------------------------|-----|
| 802.3 Maximum Frame Size | N/A |

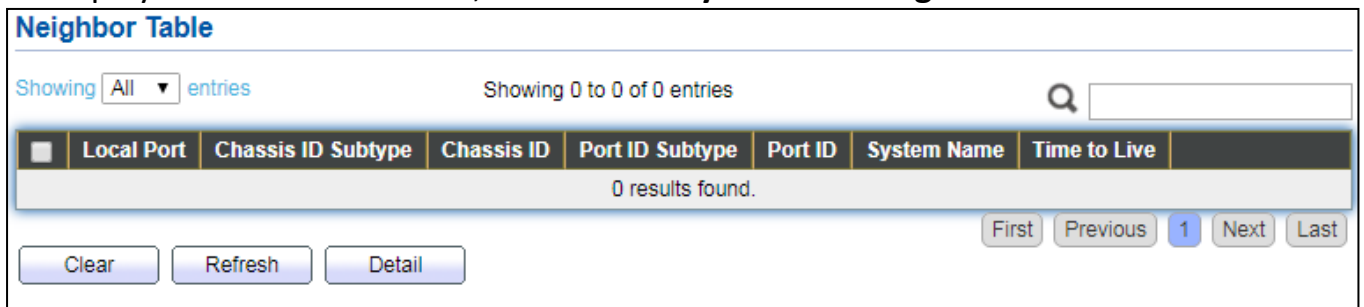
| 802.3 Link Aggregation | |
|-------------------------------|-----|
| Aggregation Capability | N/A |
| Aggregation Status | N/A |
| Aggregation Port ID | N/A |

Figure 68 - Discovery > LLDP > Local Information > Detail

IV-7-1-5 Neighbor

Use the LLDP Neighbor page to view LLDP neighbors information.

To display LLDP Remote Device, click **Discovery > LLDP > Neighbor**.



| Local Port | Chassis ID Subtype | Chassis ID | Port ID Subtype | Port ID | System Name | Time to Live |
|------------------|--------------------|------------|-----------------|---------|-------------|--------------|
| 0 results found. | | | | | | |

Figure 69 - Discovery > LLDP > Neighbor

| Item | Description |
|--------------------|--|
| Local Port | Number of the local port to which the neighbor is connected. |
| Chassis ID Subtype | Type of chassis ID (for example, MAC address). |
| Port ID Subtype | Type of the port identifier that is shown. |
| Port ID | Identifier of port. |
| System Name | Published name of the switch. |
| Time to Live | Time interval in seconds after which the information for this neighbor is deleted. |

Click “**detail**” to view selected neighbor detail information

Neighbor Information Detail

| | |
|------------|-----|
| Local Port | GE1 |
|------------|-----|

Basic Detail

| | |
|------------------------|-------------------|
| Chassis ID Subtype | MAC address |
| Chassis ID | A4:4C:C8:16:5C:FB |
| Port ID Subtype | MAC address |
| Port ID | A4:4C:C8:16:5C:FB |
| Port Description | |
| System Name | |
| System Description | |
| Supported Capabilities | N/A |
| Enabled Capabilities | N/A |

Management Address Table

| Address Subtype | Address | Interface Subtype | Interface Number |
|------------------|---------|-------------------|------------------|
| 0 results found. | | | |

MAC/PHY Detail

| | |
|--|-------------|
| Auto-Negotiation Supported | True |
| Auto-Negotiation Enabled | True |
| Auto-Negotiation Advertised Capabilities | 1000baseTFD |
| Operational MAU Type | Other |

802.3 Detail

| | |
|--------------------------|-----|
| 802.3 Maximum Frame Size | N/A |
|--------------------------|-----|

802.3 Link Aggregation

| | |
|------------------------|-----|
| Aggregation Capability | N/A |
| Aggregation Status | N/A |
| Aggregation Port ID | N/A |

802.1 VLAN and Protocol

| | |
|-----------|-----|
| PVID | |
| VLAN Name | N/A |

Figure 70 - LLDP Neighbor Detail Page

IV-7-1-6 Statistics

The Link Layer Discovery Protocol (LLDP) Statistics page displays summary and per-port information for LLDP frames transmitted and received on the switch.

To display LLDP Statistics status, click **Discovery > LLDP > Statistics**.

Global Statistics

| | |
|------------|---|
| Insertions | 2 |
| Deletions | 1 |
| Drops | 0 |
| AgeOuts | 0 |

Clear Refresh

Statistics Table

Q

| Entry | Port | Transmit Frame | | Receive Frame | | | Receive TLV | | Neighbor Timeout |
|--------------------------|------|----------------|-------|---------------|-------|---------|--------------|---|------------------|
| | | Total | Total | Discard | Error | Discard | Unrecognized | | |
| <input type="checkbox"/> | 1 | GE1 | 20307 | 9759 | 0 | 0 | 0 | 0 | 0 |
| <input type="checkbox"/> | 2 | GE2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| <input type="checkbox"/> | 3 | GE3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| <input type="checkbox"/> | 4 | GE4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| <input type="checkbox"/> | 5 | GE5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| <input type="checkbox"/> | 6 | GE6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| <input type="checkbox"/> | 7 | GE7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| <input type="checkbox"/> | 8 | GE8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| <input type="checkbox"/> | 9 | GE9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| <input type="checkbox"/> | 10 | GE10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| <input type="checkbox"/> | 11 | GE11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| <input type="checkbox"/> | 12 | GE12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| <input type="checkbox"/> | 13 | GE13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| <input type="checkbox"/> | 14 | GE14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| <input type="checkbox"/> | 15 | GE15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| <input type="checkbox"/> | 16 | GE16 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| <input type="checkbox"/> | 17 | GE17 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| <input type="checkbox"/> | 18 | GE18 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| <input type="checkbox"/> | 19 | GE19 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| <input type="checkbox"/> | 20 | GE20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| <input type="checkbox"/> | 21 | GE21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| <input type="checkbox"/> | 22 | GE22 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| <input type="checkbox"/> | 23 | GE23 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| <input type="checkbox"/> | 24 | GE24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| <input type="checkbox"/> | 25 | GE25 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| <input type="checkbox"/> | 26 | GE26 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| <input type="checkbox"/> | 27 | GE27 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| <input type="checkbox"/> | 28 | GE28 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Clear Refresh

Figure 71 - Discovery > LLDP > Statistics

| Item | Description |
|------------|---|
| Insertions | The number of times the complete set of information advertised by a particular MAC Service Access Point (MSAP) has been inserted into tables associated with the remote systems. |
| Deletions | The number of times the complete set of information advertised by MSAP has been deleted from tables associated with the remote systems. |
| Drops | The number of times the complete set of information advertised by MSAP could not be entered into tables associated with the remote systems because of insufficient resources. |
| Age Outs | The number of times the complete set of information advertised by MSAP has been deleted from tables associated with the remote systems because the information timeliness interval has expired. |

| Statistics Table | |
|--------------------------|--|
| Port | Interface or port number. |
| Transmit Frame Total | Number of LLDP frames transmitted on the corresponding port. |
| Receive Frame Total | Number of LLDP frames received by this LLDP agent on the corresponding port, while the LLDP agent is enabled. |
| Receive Frame Discard | Number of LLDP frames discarded for any reason by the LLDP agent on the corresponding port. |
| Receive Frame Error | Number of invalid LLDP frames received by the LLDP agent on the corresponding port, while the LLDP agent is enabled. |
| Receive TLV Discard | Number of TLVs of LLDP frames discarded for any reason by the LLDP agent on the corresponding port. |
| Receive TLV Unrecognized | Number of TLVs of LLDP frames that are unrecognized while the LLDP agent is enabled. |
| Neighbor Timeout | Number of age out LLDP frames. |

IV-8 Multicast

Use this section to configure Multicast.

IV-8-1 General

Use the General pages to configure settings of IGMP and MLD common function.

IV-8-1-1 Property

To display multicast general property Setting web page, click **Multicast> General> Property**.

The screenshot shows a configuration interface for Multicast settings. It is divided into two main sections. The first section, 'Unknown Multicast Action', contains three radio button options: 'Flood' (which is selected), 'Drop', and 'Forward to Router Port'. The second section, 'Multicast Forward Method', contains two radio button options: 'DMAC-VID' (which is selected) and 'DIP-VID'. Below these sections is an 'Apply' button.

Figure 72 - Multicast > General > Property

| Item | Description |
|--------------------------|--|
| Unknown Multicast Action | Set the unknown multicast action <ul style="list-style-type: none">● Flood: flood the unknown multicast data.● Drop: drop the unknown multicast data.● Router port: forward the unknown multicast data to router port. |
| IPv4 | Set the IPv4 multicast forward method. <ul style="list-style-type: none">● MAC-VID: forward method dmac+vid.● DIP-VID: forward method dip+vid. |

IV-8-1-2 Group Address

This page allows user to browse all multicast groups that dynamic learned or statically added.

To display Multicast General Group web page, click **Multicast > General > Group Address**.

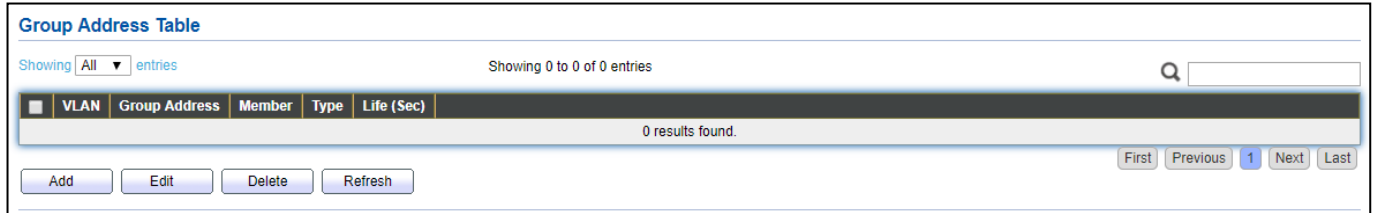


Figure 73 - Multicast > General > Group Address

| Item | Description |
|---------------|--|
| IP Version | IP Version <ul style="list-style-type: none">● IPv4: ipv4 multicast group● IPv6: ipv6 multicast group |
| VLAN | The VLAN ID of group. |
| Group Address | The group IP address. |
| Member | The member ports of group. |
| Type | The type of group. Static or Dynamic. |
| Life(Sec) | The life time of this dynamic group. |

Click “Add” or “Edit” button to view Add or Edit Group Address menu.

Add Group Address

VLAN

Group Address

Member

VLAN: 1 ▼

Group Address:

Available Port

- GE1
- GE2
- GE3
- GE4
- GE5
- GE6
- GE7
- GE8

>

<

Selected Port

Apply
Close

Edit Group Address

VLAN

Group Address

Member

VLAN: 1

Group Address: 225.0.0.225

Available Port

- GE2
- GE3
- GE4
- GE5
- GE6
- GE7
- GE8
- GE9

>

<

Selected Port

GE1

Apply
Close

Figure 74 - Multicast > General > Group Address > Add/Edit Group Address

| Item | Description |
|---------------|---|
| VLAN | The VLAN ID of group. |
| Group Address | The group IP address. (Please follow the multicast group address rule) |
| Member | <p>The member ports of group.</p> <ul style="list-style-type: none"> ● Available Port: Optional port member ● Selected Port: Selected port member <p>Move the Ports by clicking the > and < buttons after selecting a port.</p> |

IV-8-1-3 Router Port

This page allows user to browse all router port information. The static and forbidden router port can set by user.

To display multicast router port table web page, click **Multicast > General > Router Port**.

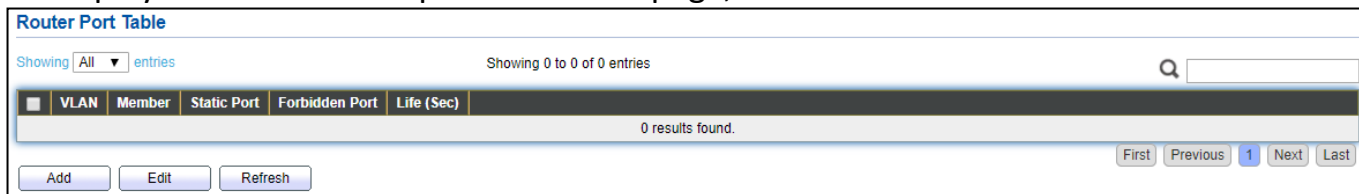


Figure 75 - Multicast > General > Router Port

| Item | Description |
|----------------|--|
| IP Version | IP Version <ul style="list-style-type: none">● IPv4: ipv4 multicast router● IPv6: ipv6 multicast router |
| VLAN | The VLAN ID router entry. |
| Member | Router Port member (include static and learned port member). |
| Static Port | Static router port member. |
| Forbidden Port | Forbidden router port member. |
| Life (Sec) | The expiry time of the router entry. |

Click "Add" or "Edit" button to view Add/Edit Router Port menu.

The screenshot shows the 'Add Router Port' configuration interface. It is divided into three sections:

- VLAN:** Contains two lists. 'Available VLAN' is empty. 'Selected VLAN' contains the value '1'. There are right and left arrow buttons between the lists.
- Type:** Contains two radio buttons. 'Static' is selected, and 'Forbidden' is unselected.
- Port:** Contains two lists. 'Available Port' lists GE2, GE3, GE4, GE5, GE6, GE7, GE8, and GE9. 'Selected Port' contains the value GE1. There are right and left arrow buttons between the lists.

 At the bottom of the window are 'Apply' and 'Close' buttons.

Figure 76 - Multicast > General > Router Port > Add Router Port

| Item | Description |
|------|---|
| VLAN | The VLAN ID for router entry <ul style="list-style-type: none"> ● Available VLAN: Optional VLAN member ● Selected VLAN: Selected VLAN member. |
| Type | The router port type <ul style="list-style-type: none"> ● Static: static router port ● Forbidden: forbidden router port, can't learn dynamic router port member |
| Port | The member ports of router entry. <ul style="list-style-type: none"> ● Available Port: Optional router port member ● Selected Port: Selected router port member |

IV-8-2 IGMP Snooping

Use the IGMP Snooping pages to configure settings of IGMP snooping function.

IV-8-2-1 Property

This page allows user to configure global settings of IGMP snooping and configure specific VLAN settings of IGMP Snooping.

To display IGMP Snooping global setting and VLAN Setting web page, click **Multicast > IGMP Snooping > Property**.

Figure 77 - Multicast > IGMP Snooping > Property

| Item | Description |
|------------------------|--|
| State | Set the enabling status of IGMP Snooping functionality Enable: If Checked Enable IGMP Snooping, else is Disabled IGMP Snooping. |
| Version | Set the igmp snooping version <ul style="list-style-type: none"> ● IGMPv2: Only support process igmp v2 packet. ● IGMPv3: Support v3 basic and v2. |
| Report Suppression | Set the enabling status of IGMP v2 report suppression Enable: If Checked Enable IGMP Snooping v2 report suppression, else Disable the report suppression function. |
| VLAN | The IGMP entry VLAN ID. |
| Operation Status | The enable status of IGMP snooping VLAN functionality. |
| Router Port Auto Learn | The enabling status of IGMP snooping router port auto learning. |
| Query Robustness | The Query Robustness allows tuning for the expected packet loss on a subnet. |

| | |
|-----------------------------|---|
| Query Interval | The interval of querier to send general query. |
| Query Max Response Interval | In Membership Query Messages, it specifies the maximum allowed time before sending a responding report in units of 1/10 second. |
| Last Member Query count | The count that Querier-switch sends Group-Specific Queries when it receives a Leave Group message for a group. |
| Last Member Query Interval | The interval that Querier-switch sends Group-Specific Queries when it receives a Leave Group message for a group. |
| Immediate leave | The immediate leave status of the group will immediate leave when receive IGMP Leave message. |

Click "Edit" button to Edit VLAN Setting menu.

Edit VLAN Setting

| | |
|------------------------|--|
| VLAN | 1 |
| State | <input type="checkbox"/> Enable |
| Router Port Auto Learn | <input checked="" type="checkbox"/> Enable |
| Immediate leave | <input type="checkbox"/> Enable |

| | |
|-----------------------------|--|
| Query Robustness | <input type="text" value="2"/> (1 - 7, default 2) |
| Query Interval | <input type="text" value="125"/> Sec (30 - 18000, default 125) |
| Query Max Response Interval | <input type="text" value="10"/> Sec (5 - 20, default 10) |

| | |
|----------------------------|--|
| Last Member Query Counter | <input type="text" value="2"/> (1 - 7, default 2) |
| Last Member Query Interval | <input type="text" value="1"/> Sec (1 - 25, default 1) |

Operational Status

| | |
|-----------------------------|-----------|
| Status | Disabled |
| Query Robustness | 2 |
| Query Interval | 125 (Sec) |
| Query Max Response Interval | 10 (Sec) |
| Last Member Query Counter | 2 |
| Last Member Query Interval | 1 (Sec) |

Apply
Close

Figure 78 - Multicast > IGMP Snooping > Property > Edit VLAN Setting

| Item | Description |
|------------------------|---|
| VLAN | The selected VLAN List. |
| State | Set the enabling status of IGMP Snooping VLAN functionality Enable: If Checked Enable IGMP Snooping VLAN, else is Disabled IGMP Snooping VLAN. |
| Router Port Auto Learn | Set the enabling status of IGMP Snooping router port learning Enable: If checked Enable learning router port by query and PIM, DVRMP, else Disable the learning router port. |
| Immediate leave | Immediate Leave the group when receive IGMP Leave message. Enable: If checked Enable immediate leave, else disable immediate leave. |
| Query Robustness | The Admin Query Robustness allows tuning for the expected packet loss on a subnet. |

| | |
|-----------------------------|---|
| Query Interval | The Admin interval of querier to send general query. |
| Query Max Response Interval | The Admin query max response interval , In Membership Query Messages, it specifies the maximum allowed time before sending a responding report in units of 1/10 second. |
| Last Member Query Counter | The Admin last member query count that Querier-switch sends Group-Specific Queries when it receives a Leave Group message for a group. |
| Last Member Query Interval | The Admin last member query interval that Querier-switch sends Group-Specific Queries when it receives a Leave Group message for a group. |
| Operational Status | |
| Status | Operational IGMP snooping status , must both IGMP snooping global and IGMP snooping enable the status will be enable. |
| Query Robustness | Operational Query Robustness. |
| Query Interval | Operational Query Interval. |
| Query Max Response Interval | Operational Query Max Response Interval |
| Last Member Query Counter | Operational Last Member Query Count. |
| Last Member Query Interval | Operational Last Member Query Interval. |

IV-8-2-2 Querier

This page allows user to configure querier settings on specific VLAN of IGMP Snooping.

To display IGMP Snooping Querier Setting web page, click **Multicast > IGMP Snooping > Querier**.

| Querier Table | | | | | | |
|--------------------------|------|----------|--------------------|---------|-----------------|--|
| <input type="checkbox"/> | VLAN | State | Operational Status | Version | Querier Address | |
| <input type="checkbox"/> | 1 | Disabled | Disabled | | | |

Figure 79 - Multicast > IGMP Snooping > Querier

| Item | Description |
|--------------------|---|
| VLAN | IGMP Snooping querier entry VLAN ID. |
| State | The IGMP Snooping querier Admin State. |
| Operational Status | The IGMP Snooping querier operational status. |
| Querier Version | The IGMP Snooping querier operational version. |
| Querier IP | The operational Querier IP address on the VLAN. |

Click "**Edit**" button to view Edit Querier menu.

Figure 80 - Multicast > IGMP Snooping > Querier > Edit Querier

| Item | Description |
|---------|---|
| VLAN | The Selected Edit IGMP Snooping querier VLAN List. |
| State | Set the enabling status of IGMP Querier Election on the chose VLANs Enabled: if checked Enable IGMP Querier else Disable IGMP Querier. |
| Version | Set the query version of IGMP Querier Election on the chose VLANs <ul style="list-style-type: none"> ● IGMPv2: Querier version 2. ● IGMPv3: Querier version 3. (IGMP Snooping version should be IGMPv3) |

IV-8-2-3 Statistics

This page allows user to clear IGMP snooping statics.

To display IGMP Snooping Statistics, click **Multicast > IGMP Snooping > Statistics**.

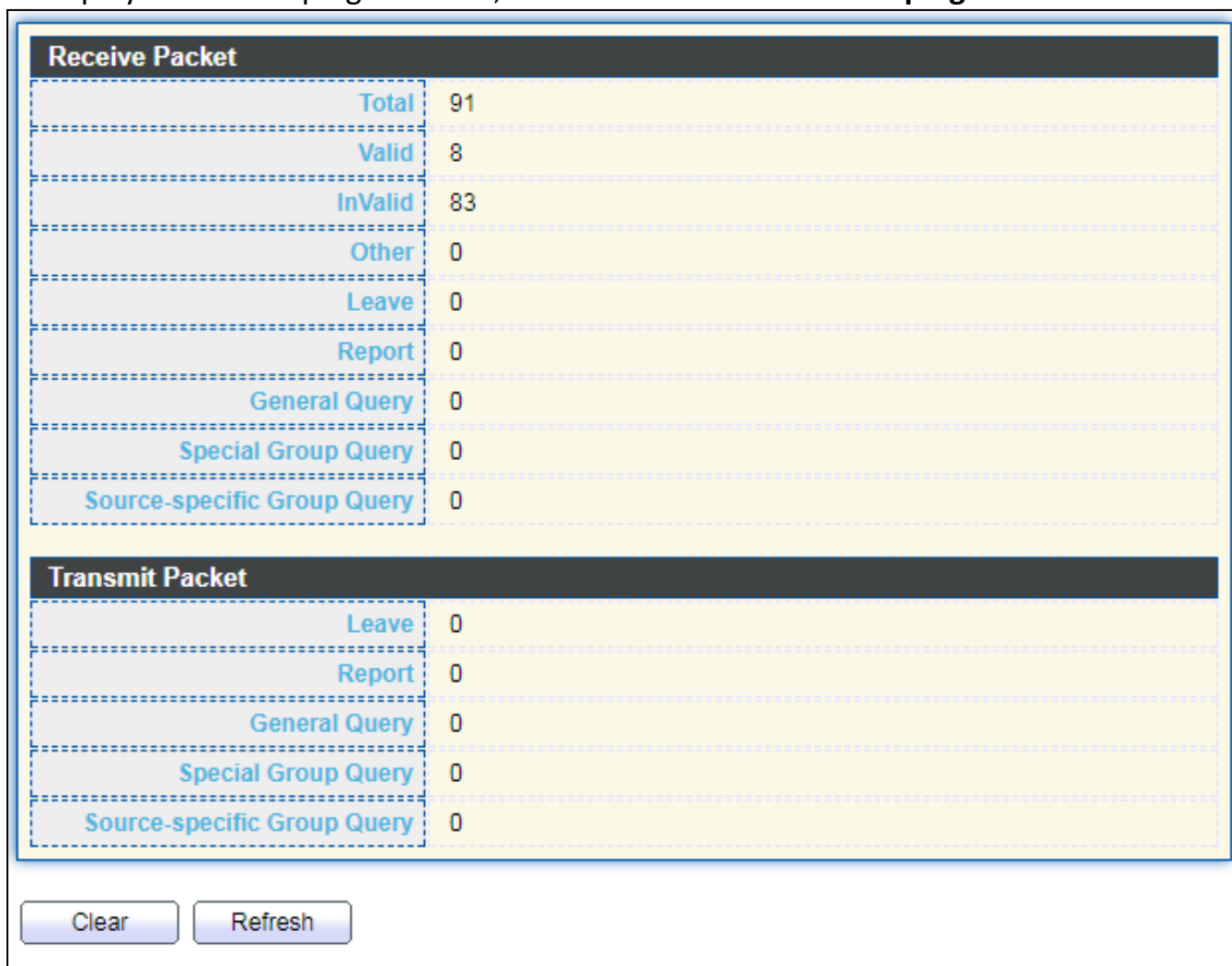


Figure 81 - Multicast > IGMP Snooping > Statistics

| Item | Description |
|---------------------|--|
| Receive Packet | |
| Total | Total RX igmp packet, include ipv4 multicast data to CPU. |
| Valid | The valid igmp snooping process packet. |
| InValid | The invalid igmp snooping process packet. |
| Other | The ICMP protocol is not 2, and is not ipv4 multicast data packet. |
| Leave | IGMP leave packet. |
| Report | IGMP join and report packet. |
| General Query | IGMP General Query packet. |
| Special Group Query | IGMP Special Group General Query packet. |
| Source-specific | IGMP Special Source and Group General Query packet. |

| | |
|-----------------------------|--|
| Group Query | |
| Transmit Packet | |
| Leave | IGMP leave packet |
| Report | IGMP join and report packet |
| General Query | IGMP general query packet include querier transmit general query packet. |
| Special Group Query | IGMP special group query packet include querier transmit special group query packet. |
| Source-specific Group Query | IGMP Special Source and Group General Query packet. |

IV-8-3 MVR

Use the MVR pages to configure settings of MVR function.

IV-8-3-1 Property

To display multicast MVR property Setting web page, click **Multicast > MVR > Property**.

The screenshot shows the configuration interface for MVR. It includes the following fields and options:

- State:** Enable
- VLAN:** 1
- Mode:** Compatible, Dynamic
- Group Start:** 0.0.0.0
- Group Count:** 1 (1 - 128)
- Query Time:** 1 Sec (1 - 10)

Operational Group

- Maximum:** 128
- Current:** 0

Apply

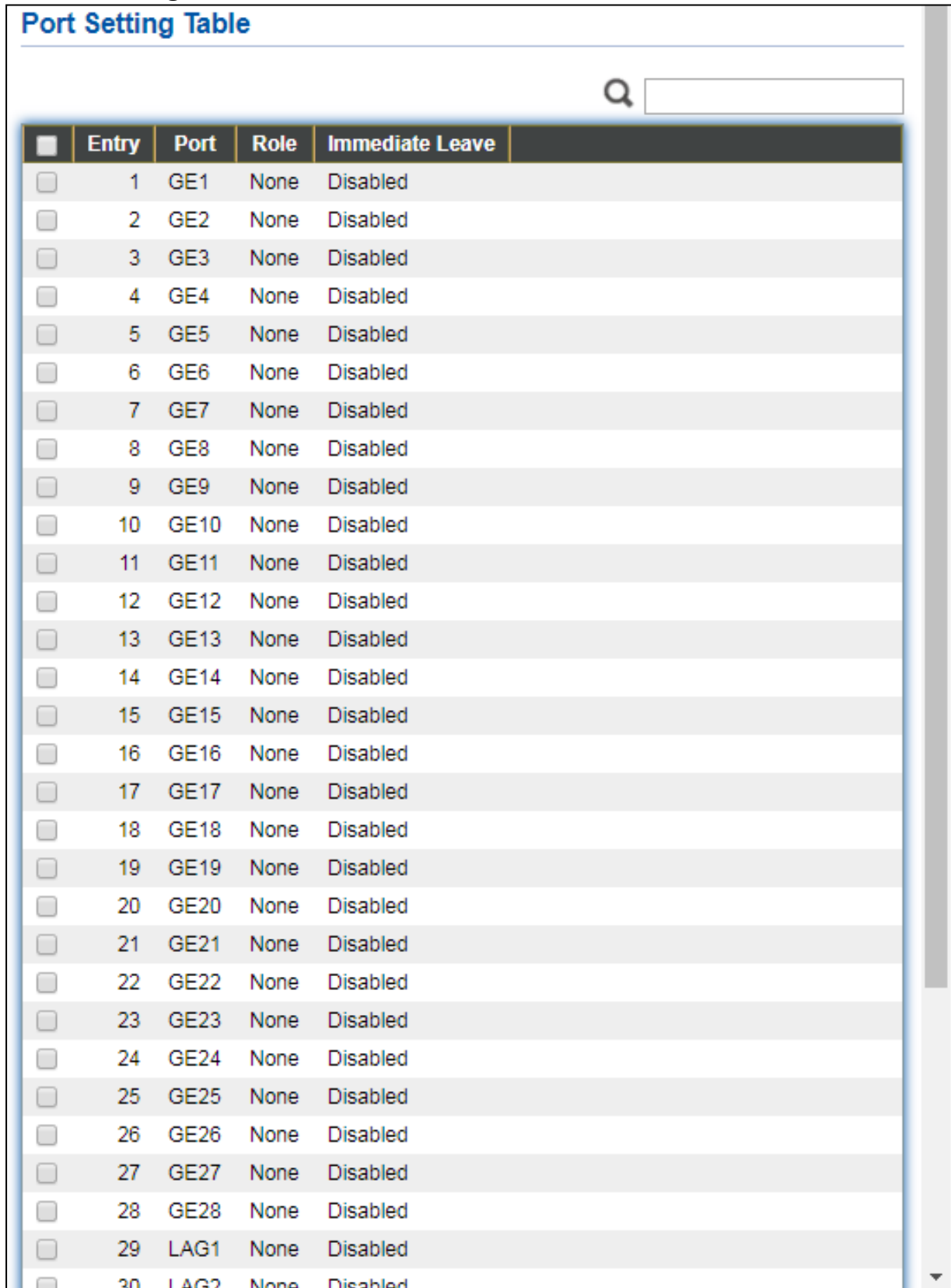
Figure 82 - Multicast > MVR > Property

| Item | Description |
|-------------|---|
| State | Enable: if checked enable the MVR state, else disable the MVR state. |
| VLAN | The MVR VLAN ID. |
| Mode | Set the MVR mode <ul style="list-style-type: none">● Compatible: compatible mode.● Dynamic: learn group member on source port. |
| Group Start | MVR group range start. |
| Group Count | MVR group continue count. |
| Query Time | MVR query time when receive MVR leave MVR group packet. |
| Maximum | The max number of MVR group database. |
| Current | The learned MVR group current time |

IV-8-3-2 Port Setting

This page allows user to configure port role and port immediate leave.

To display MVR port role and immediate leave state setting web page, click **Multicast > MVR > Port Setting**.



| <input type="checkbox"/> | Entry | Port | Role | Immediate Leave |
|--------------------------|-------|------|------|-----------------|
| <input type="checkbox"/> | 1 | GE1 | None | Disabled |
| <input type="checkbox"/> | 2 | GE2 | None | Disabled |
| <input type="checkbox"/> | 3 | GE3 | None | Disabled |
| <input type="checkbox"/> | 4 | GE4 | None | Disabled |
| <input type="checkbox"/> | 5 | GE5 | None | Disabled |
| <input type="checkbox"/> | 6 | GE6 | None | Disabled |
| <input type="checkbox"/> | 7 | GE7 | None | Disabled |
| <input type="checkbox"/> | 8 | GE8 | None | Disabled |
| <input type="checkbox"/> | 9 | GE9 | None | Disabled |
| <input type="checkbox"/> | 10 | GE10 | None | Disabled |
| <input type="checkbox"/> | 11 | GE11 | None | Disabled |
| <input type="checkbox"/> | 12 | GE12 | None | Disabled |
| <input type="checkbox"/> | 13 | GE13 | None | Disabled |
| <input type="checkbox"/> | 14 | GE14 | None | Disabled |
| <input type="checkbox"/> | 15 | GE15 | None | Disabled |
| <input type="checkbox"/> | 16 | GE16 | None | Disabled |
| <input type="checkbox"/> | 17 | GE17 | None | Disabled |
| <input type="checkbox"/> | 18 | GE18 | None | Disabled |
| <input type="checkbox"/> | 19 | GE19 | None | Disabled |
| <input type="checkbox"/> | 20 | GE20 | None | Disabled |
| <input type="checkbox"/> | 21 | GE21 | None | Disabled |
| <input type="checkbox"/> | 22 | GE22 | None | Disabled |
| <input type="checkbox"/> | 23 | GE23 | None | Disabled |
| <input type="checkbox"/> | 24 | GE24 | None | Disabled |
| <input type="checkbox"/> | 25 | GE25 | None | Disabled |
| <input type="checkbox"/> | 26 | GE26 | None | Disabled |
| <input type="checkbox"/> | 27 | GE27 | None | Disabled |
| <input type="checkbox"/> | 28 | GE28 | None | Disabled |
| <input type="checkbox"/> | 29 | LAG1 | None | Disabled |
| <input type="checkbox"/> | 30 | LAG2 | None | Disabled |

Figure 83 - Multicast > MVR > Port Setting

| Item | Description |
|-----------------|--|
| Entry | Entry of number. |
| Port | Port Name. |
| Role | Port Role for MVR, the type is None/Receiver/Source. |
| Immediate Leave | Status of immediate leave. |

Click "**Edit**" button to view Edit Port Setting menu.

The screenshot shows the 'Edit Port Setting' dialog box. It contains the following fields and options:

- Port:** GE1
- Role:**
 - None
 - Receiver
 - Source
- Immediate Leave:** Enable

Buttons: Apply, Close

Figure 84 - Multicast > MVR > Port Setting > Edit Port Setting

| Item | Description |
|-----------------|--|
| Port | Display the selected port list. |
| Role | MVR port role <ul style="list-style-type: none"> ● None: port role is none. ● Receiver: port role is receiver. ● Source: port role is source. |
| Immediate Leave | MVR Port immediate leave Enable: if checked is enable immediate leave, else disable immediate leave. |

IV-8-3-3 Group Address

This page allows user to browse all multicast MVR groups that dynamic learned or statically added.

To display Multicast MVR Group web page, click **Multicast > MVR > Group Address**.

Figure 85 - Multicast > MVR > Group Address

| Item | Description |
|---------------|---|
| VLAN | The VLAN ID of MVR group. |
| Group Address | The MVR group IP address. |
| Member | The member ports of MVR group. |
| Type | The type of MVR group. Static or Dynamic. |
| Life(Sec) | The life time of this dynamic MVR group. |

Click **"Add"** button to view Add/Edit Group Address Table menu.

Figure 86 - Multicast > MVR > Group Address > Add Group Address

| Item | Description |
|---------------|---|
| VLAN | The VLAN ID of MVR group. |
| Group Address | The MVR group IP address. |
| Member | <p>The member ports of MVR group.</p> <ul style="list-style-type: none"> ● Available Port: Optional port member, it is only receiver port when MVR mode is compatible, it include source port when mode is dynamic. ● Selected Port: Selected port member |

IV-9 Security

Use the Security pages to configure settings for the switch security features.

IV-9-1 RADIUS

This page allows user to add, edit or delete RADIUS server settings and modify default parameter of RADIUS server.

To display RADIUS web page, click **Security > RADIUS**.

Figure 87 - Security > RADIUS

| Item | Description |
|----------------|---|
| Retry | Set default retry number. |
| Timeout | Set default timeout value. |
| Key String | Set default RADIUS key string |
| RADIUS Table | |
| Server Address | RADIUS server address. |
| Server Port | RADIUS server port. |
| Priority | RADIUS server priority (smaller value has higher priority). RADIUS session will try to establish with the server setting which has highest priority. If failed, it will try to connect to the server with next higher priority. |
| Retry | RADIUS server retry value. If it is fail to connect to server, it will keep trying until timeout with retry times. |
| Timeout | RADIUS server timeout value. If it is fail to connect to server, it will |

| | |
|-------|---|
| | keep trying until timeout. |
| Usage | RADIUS server usage type Login: For login authentication. 802.1x: For 802.1x authentication. All: For all types. |

Click "Add" or "Edit" button to view Add/Edit RADIUS Server menu.

Add RADIUS Server

| | |
|-----------------------|---|
| Address Type | <input checked="" type="radio"/> Hostname <input type="radio"/> IPv4 <input type="radio"/> IPv6 |
| Server Address | <input style="width: 100%;" type="text"/> |
| Server Port | <input style="width: 80%;" type="text" value="1812"/> (0 - 65535, default 1812) |
| Priority | <input style="width: 80%;" type="text"/> (0 - 65535) |
| Key String | <input checked="" type="checkbox"/> Use Default <input style="width: 100%;" type="text"/> |
| Retry | <input checked="" type="checkbox"/> Use Default <input style="width: 80%;" type="text" value="3"/> (1 - 10, default 3) |
| Timeout | <input checked="" type="checkbox"/> Use Default <input style="width: 80%;" type="text" value="3"/> Sec (1 - 30, default 3) |
| Usage | <input type="radio"/> Login <input type="radio"/> 802.1X <input checked="" type="radio"/> All |

Edit RADIUS Server

| | |
|-----------------------|---|
| Server Address | undefined |
| Server Port | <input type="text" value="0"/> (0 - 65535, default 1812) |
| Priority | <input type="text" value="-1"/> (0 - 65535) |
| Key String | <input type="checkbox"/> Use Default <input type="text"/> |
| Retry | <input type="checkbox"/> Use Default <input type="text" value="0"/> (1 - 10, default 3) |
| Timeout | <input type="checkbox"/> Use Default <input type="text" value="0"/> Sec (1 - 30, default 3) |
| Usage | <input checked="" type="radio"/> Login <input type="radio"/> 802.1X <input type="radio"/> All |

Figure 88 - Security > RADIUS > Add/Edit RADIUS Server

| Item | Description |
|----------------|--|
| Address Type | In add dialog, user need to specify server Address Type <ul style="list-style-type: none"> ● Hostname: Use domain name as server address. ● IPv4: Use IPv4 as server address. ● IPv6: Use IPv6 as server address. |
| Server Address | In add dialog, user need to input server address based on address type. In edit dialog, it shows current edit server address. |
| Server Port | Set RADIUS server port. |
| Priority | Set RADIUS server priority (smaller value has higher priority). RADIUS session will try to establish with the server setting which has highest priority. If failed, it will try to connect to the server with next higher priority. |
| Retry | Set RADIUS server retry value. If it is fail to connect to server, it will keep trying until timeout with retry times. |
| Timeout | Set RADIUS server timeout value. If it is fail to connect to server, it will keep trying until timeout. |
| Usage | Set RADIUS server usage type <ul style="list-style-type: none"> ● Login: For login authentification. ● 802.1x: For 802.1x authentication. ● All: For all types. |

IV-9-2 Management Access

Use the Management Access pages to configure settings of management access.

IV-9-2-1 Management Service

This page allows user to change management services related configurations.

To display Management Service click **Security > Management Access > Management Service**.

| Management Service | |
|--------------------|--|
| Telnet | <input type="checkbox"/> Enable |
| SSH | <input type="checkbox"/> Enable |
| HTTP | <input checked="" type="checkbox"/> Enable |
| HTTPS | <input type="checkbox"/> Enable |
| SNMP | <input checked="" type="checkbox"/> Enable |

| Session Timeout | |
|-----------------|--------------------------------|
| Console | 10 Min (0 - 65535, default 10) |
| Telnet | 10 Min (0 - 65535, default 10) |
| SSH | 10 Min (0 - 65535, default 10) |
| HTTP | 10 Min (0 - 65535, default 10) |
| HTTPS | 10 Min (0 - 65535, default 10) |

| Password Retry Count | |
|----------------------|------------------------|
| Console | 3 (0 - 120, default 3) |
| Telnet | 3 (0 - 120, default 3) |
| SSH | 3 (0 - 120, default 3) |

| Silent Time | |
|-------------|------------------------------|
| Console | 0 Sec (0 - 65535, default 0) |
| Telnet | 0 Sec (0 - 65535, default 0) |
| SSH | 0 Sec (0 - 65535, default 0) |

Apply

Figure 89 - Security > Management Access > Management Service

| Item | Description |
|----------------------|--|
| Management Service | Management service admin state. <ul style="list-style-type: none"> ● Telnet: Connect CLI through telnet. ● SSH: Connect CLI through SSH. ● HTTP: Connect WEBUI through HTTP. ● HTTPS: Connect WEBUI through HTTPS. ● SNMP: Manage switch trough SNMP. |
| Session Timeout | Set session timeout minutes for user access to user interface. 0 minutes means never timeout. |
| Password Retry Count | Retry count is the number which CLI password input error tolerance count. After input error password exceeds this count, the CLI will freeze after silent time. |
| Silent Time | After input error password exceeds password retry count, the CLI will freeze after silent time. |

IV-9-2-2 Management ACL

This page allows user to add or delete management ACL rule. A rule cannot be deleted if under active.

To display Management ACL page, click **Security > Management Access > Management ACL**.

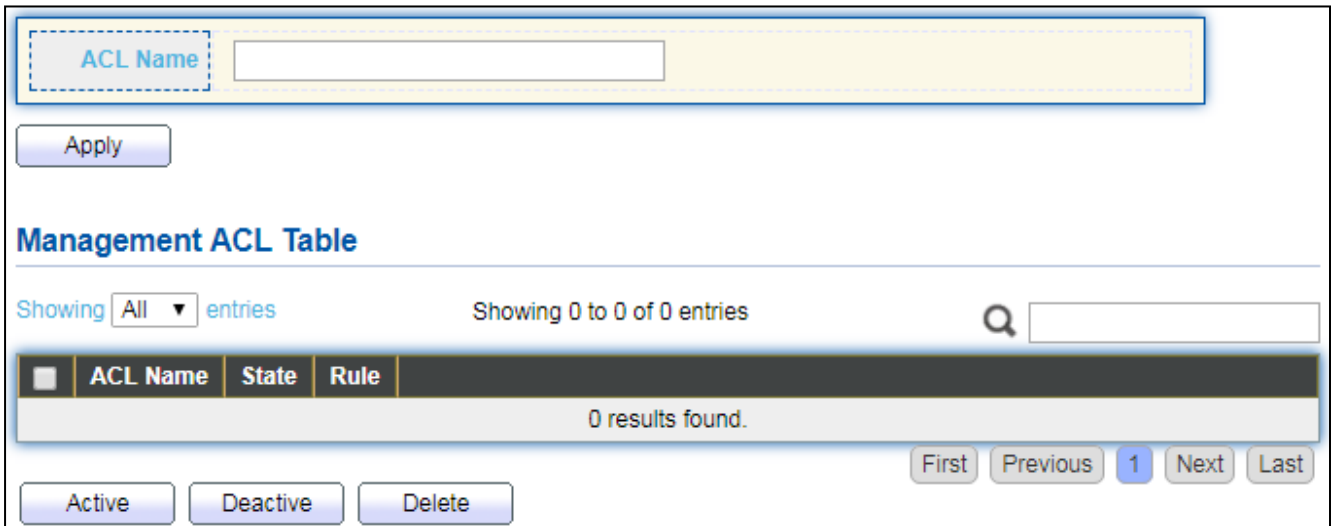


Figure 90 - Security > Management Access > Management ACL

| Item | Description |
|----------------|--|
| ACL Name | Input MAC ACL name. |
| Management ACL | |
| ACL Name | Display Management ACL name. |
| State | Display Management ACL whether active. |
| Rule | Display the number Management ACE rule of ACL. |

IV-9-2-3 Management ACE

This page allows user to add, edit or delete ACE rule. An ACE rule cannot be edited or deleted if ACL under active. New ACE cannot be added if ACL under active

To display Management ACE page, click **Security > Management Access > Management ACE**.

Management ACE Table

ACL Name

Showing entries Showing 0 to 0 of 0 entries

| <input type="checkbox"/> | Priority | Action | Service | Port | Address / Mask |
|--------------------------|----------|--------|---------|------|----------------|
| 0 results found. | | | | | |

Figure 91 - Security > Management Access > Management ACE

| Item | Description |
|----------------|---|
| ACL Name | Select the ACL name to which an ACE is being added. |
| Priority | Display the priority of ACE. |
| Action | Display the action of ACE. |
| Service | Display the service ACE |
| Port | Display the port list of ACE |
| Address / Mask | Display the source IP address and mask of ACE. |

Click "Add" or "Edit" button to view Add/Edit Management ACE menu.

Add Management ACE

| | | |
|------------|--|---------------|
| ACL Name | manage | |
| Priority | 1 (1 - 65535) | |
| Service | <input type="radio"/> All <input type="radio"/> Http <input type="radio"/> Https <input checked="" type="radio"/> Snmp <input type="radio"/> SSH <input type="radio"/> Telnet | |
| Action | <input type="radio"/> Permit <input checked="" type="radio"/> Deny | |
| Port | Available Port | Selected Port |
| | GE1 GE2 GE3 GE4 GE5 GE6 GE7 GE8 | |
| IP Version | <input checked="" type="radio"/> All <input type="radio"/> IPv4 <input type="radio"/> IPv6 | |
| IPv4 | / 255.255.255.255 | |
| IPv6 | / 128 (1 - 128) | |

Apply Close

Edit Management ACE

| | | |
|-------------------|--|----------------------|
| ACL Name | manage | |
| Priority | 1 | |
| Service | <input type="radio"/> All <input type="radio"/> Http <input type="radio"/> Https <input checked="" type="radio"/> Snmp <input type="radio"/> SSH <input type="radio"/> Telnet | |
| Action | <input type="radio"/> Permit <input checked="" type="radio"/> Deny | |
| Port | Available Port GE2 GE3 GE4 GE5 GE6 GE7 GE8 GE9 | Selected Port GE1 |
| IP Version | <input checked="" type="radio"/> All <input type="radio"/> IPv4 <input type="radio"/> IPv6 | |
| IPv4 | / 255.255.255.255 | |
| IPv6 | / 128 (1 - 128) | |

Figure 92 - Security > Management Access > Add/Edit Management ACE

| Item | Description |
|----------|--|
| ACL Name | Display the ACL name to which an ACE is being added. |
| Priority | Specify the priority of the ACE. ACEs with higher sequence are processed first (1 is the highest priority). Only available on Add Dialog. |
| Service | Select the type service of rule. <ul style="list-style-type: none"> ● All: All services. ● HTTP: Only HTTP service. ● HTTPS: Only HTTPS service. ● SNMP: Only SNMP service. ● SSH: Only SSH service. ● Telnet: Only Telnet service |
| Action | Select the action after ACE match packet. <ul style="list-style-type: none"> ● Permit: Forward packets that meet the ACE criteria. |

| | |
|------------|---|
| | <ul style="list-style-type: none"> ● Deny: Drop packets that meet the ACE criteria. |
| Port | Select ports which will be matched. |
| IP Version | Select the type of source IP address. <ul style="list-style-type: none"> ● All: All IP addresses can access. ● IPv4: Specify IPv4 address ca access. ● IPv6: Specify IPv6 address ca access. |
| IPv4 | Enter the source IPv4 address value and mask to which will be matched. |
| IPv6 | Enter the source IPv6 address value and mask to which will be matched. |

IV-9-3 Authentication Manager

IV-9-3-1 Property

This page allows user to edit authentication global settings and some port mods' configurations.

To display authentication manager Property web page, click **Security > Authentication Manager > Property**.

Authentication Type 802.1x
Enable Enable
Guest VLAN 1
MAC-Based User ID Format XXXXXXXXXXXX

Apply

Port Mode Table

| Entry | Port | Authentication Type | Host Mode | Method | Guest VLAN | VLAN Assign Mode | |
|--------------------------|------|---------------------|-----------|-------------------------|------------|------------------|--------|
| <input type="checkbox"/> | 1 | GE1 | Disabled | Multiple Authentication | RADIUS | Disabled | Static |
| <input type="checkbox"/> | 2 | GE2 | Disabled | Multiple Authentication | RADIUS | Disabled | Static |
| <input type="checkbox"/> | 3 | GE3 | Disabled | Multiple Authentication | RADIUS | Disabled | Static |
| <input type="checkbox"/> | 4 | GE4 | Disabled | Multiple Authentication | RADIUS | Disabled | Static |
| <input type="checkbox"/> | 5 | GE5 | Disabled | Multiple Authentication | RADIUS | Disabled | Static |
| <input type="checkbox"/> | 6 | GE6 | Disabled | Multiple Authentication | RADIUS | Disabled | Static |
| <input type="checkbox"/> | 7 | GE7 | Disabled | Multiple Authentication | RADIUS | Disabled | Static |
| <input type="checkbox"/> | 8 | GE8 | Disabled | Multiple Authentication | RADIUS | Disabled | Static |
| <input type="checkbox"/> | 9 | GE9 | Disabled | Multiple Authentication | RADIUS | Disabled | Static |
| <input type="checkbox"/> | 10 | GE10 | Disabled | Multiple Authentication | RADIUS | Disabled | Static |
| <input type="checkbox"/> | 11 | GE11 | Disabled | Multiple Authentication | RADIUS | Disabled | Static |
| <input type="checkbox"/> | 12 | GE12 | Disabled | Multiple Authentication | RADIUS | Disabled | Static |
| <input type="checkbox"/> | 13 | GE13 | Disabled | Multiple Authentication | RADIUS | Disabled | Static |
| <input type="checkbox"/> | 14 | GE14 | Disabled | Multiple Authentication | RADIUS | Disabled | Static |
| <input type="checkbox"/> | 15 | GE15 | Disabled | Multiple Authentication | RADIUS | Disabled | Static |
| <input type="checkbox"/> | 16 | GE16 | Disabled | Multiple Authentication | RADIUS | Disabled | Static |
| <input type="checkbox"/> | 17 | GE17 | Disabled | Multiple Authentication | RADIUS | Disabled | Static |
| <input type="checkbox"/> | 18 | GE18 | Disabled | Multiple Authentication | RADIUS | Disabled | Static |
| <input type="checkbox"/> | 19 | GE19 | Disabled | Multiple Authentication | RADIUS | Disabled | Static |
| <input type="checkbox"/> | 20 | GE20 | Disabled | Multiple Authentication | RADIUS | Disabled | Static |
| <input type="checkbox"/> | 21 | GE21 | Disabled | Multiple Authentication | RADIUS | Disabled | Static |
| <input type="checkbox"/> | 22 | GE22 | Disabled | Multiple Authentication | RADIUS | Disabled | Static |
| <input type="checkbox"/> | 23 | GE23 | Disabled | Multiple Authentication | RADIUS | Disabled | Static |
| <input type="checkbox"/> | 24 | GE24 | Disabled | Multiple Authentication | RADIUS | Disabled | Static |
| <input type="checkbox"/> | 25 | GE25 | Disabled | Multiple Authentication | RADIUS | Disabled | Static |
| <input type="checkbox"/> | 26 | GE26 | Disabled | Multiple Authentication | RADIUS | Disabled | Static |
| <input type="checkbox"/> | 27 | GE27 | Disabled | Multiple Authentication | RADIUS | Disabled | Static |
| <input type="checkbox"/> | 28 | GE28 | Disabled | Multiple Authentication | RADIUS | Disabled | Static |

Edit

Figure 93 - Security > Authentication Manager > Property

| Item | Description |
|--------------------------|---|
| Authentication Type | Set checkbox to enable/disable following authentication types <ul style="list-style-type: none"> ● 802.1x: Use IEEE 802.1x to do authentication |
| Guest VLAN | Set checkbox to enable/disable guest VLAN, if guest VLAN is enabled, you need to select one available VLAN ID to be guest VID. |
| MAC-Based User ID Format | Select mac-based authentication RADIUS username/password ID format. |

| | |
|--|--|
| | <ul style="list-style-type: none"> ● XXXXXXXXXXXX ● Xxxxxxxxxxxxxx ● XX:XX:XX:XX:XX:XX ● xx:xx:xx:xx:xx:xx ● XX-XX-XX-XX-XX-XX ● xx-xx-xx-xx-xx-xx ● XX.XX.XX.XX.XX.XX ● xx.xx.xx.xx.xx.xx ● XXXX:XXXX:XXXX ● xxxx:xxxx:xxxx ● XXXX-XXXX-XXXX ● XXXX-XXXX-XXXX ● XXXX.XXXX.XXXX ● XXXX.XXXX.XXXX ● XXXXXX:XXXXXX ● XXXXXX:XXXXXX ● XXXXXX-XXXXXX ● XXXXXX-XXXXXX |
|--|--|

Port Mode Table

| Port | Port Name. |
|------------------------------|--|
| Authentication Type (802.1X) | 802.1X authentication type state <ul style="list-style-type: none"> ● Enabled: 802.1X is enabled. ● Disabled: 802.1X is disabled. |
| Method | Support following authentication method order combinations. These orders only available on MAC-Based authentication and WEB-Based authentication. 802.1x only support Radius method. <ul style="list-style-type: none"> ● Local: Use DUT’s local database to do authentication ● Radius: Use remote RADIUS server to do authentication ● Local Radius ● Radius Local |
| Guest VLAN | Port guest VLAN enable state <ul style="list-style-type: none"> ● Enabled: Guest VLAN is enabled on port. ● Disabled: Guest VLAN is disabled on port. |
| VLAN Assign Mode | Support following VLAN assign mode and only apply when source is RADIUS <ul style="list-style-type: none"> ● Disable: Ignore the VLAN authorization result and keep original VLAN of host. ● Reject: If get VLAN authorized information, just use it. However, if there is no VLAN authorized information, reject the host and make it unauthorized. ● Static: If get VLAN authorized information, just use it. If there is no VLAN authorized information, keep original VLAN of host. |

Click **“Edit”** button to view the Edit Port Mode menu.

Figure 94 - Security > Authentication Manager > Property > Edit Port Mode

| Item | Description |
|---------------------|--|
| Port | Selected port list. |
| Authentication Type | Set checkbox to enable/disable authentication types. |
| Host Mode | <p>Select authenticating host mode</p> <ul style="list-style-type: none"> ● Multiple Authentication: In this mode, every client need to pass authenticate procedure individually. ● Multiple Hosts: In this mode, only one client need to be authenticated and other clients will get the same access accessibility. Web-auth cannot be enabled in this mode. ● Single Host: In this mode, only one host is allowed to be authenticated. It is the same as Multi-auth mode with max hosts number configure to be 1. |
| Method | <p>Support following authentication method order combinations. These orders only available on MAC-Based authentication and WEB-Based authentication. 802.1x only support Radius method.</p> <ul style="list-style-type: none"> ● Local: Use DUT’s local database to do authentication. ● Radius: Use remote RADIUS server to do authentication. ● Local Radius. ● Radius Local. |
| Guest VLAN | Set checkbox to enable/disable guest VLAN. |

| | |
|------------------|---|
| VLAN Assign Mode | <p>Support following VLAN assign mode and only apply when source is RADIUS</p> <ul style="list-style-type: none">● Disable: Ignore the VLAN authorization result and keep original VLAN of host.● Reject: If get VLAN authorized information, just use it. However, if there is no VLAN authorized information, reject the host and make it unauthorized.● Static: If get VLAN authorized information, just use it. If there is no VLAN authorized information, keep original VLAN of host. |
|------------------|---|

IV-9-3-2 Port Setting

This page allows user to configure authentication manger port settings

To display the authentication manager Port Setting web page, click **Security > Authentication Manager > Port Setting**.

Port Setting Table

| Entry | Port | Port Control | Reauthentication | Max Hosts | Common Timer | | | 802.1x Parameters | | | | |
|--------------------------|------|--------------|------------------|-----------|------------------|----------|-------|-------------------|--------------------|----------------|-------------|---|
| | | | | | Reauthentication | Inactive | Quiet | TX Period | Supplicant Timeout | Server Timeout | Max Request | |
| <input type="checkbox"/> | 1 | GE1 | Disabled | Disabled | 256 | 3600 | 60 | 60 | 30 | 30 | 30 | 2 |
| <input type="checkbox"/> | 2 | GE2 | Disabled | Disabled | 256 | 3600 | 60 | 60 | 30 | 30 | 30 | 2 |
| <input type="checkbox"/> | 3 | GE3 | Disabled | Disabled | 256 | 3600 | 60 | 60 | 30 | 30 | 30 | 2 |
| <input type="checkbox"/> | 4 | GE4 | Disabled | Disabled | 256 | 3600 | 60 | 60 | 30 | 30 | 30 | 2 |
| <input type="checkbox"/> | 5 | GE5 | Disabled | Disabled | 256 | 3600 | 60 | 60 | 30 | 30 | 30 | 2 |
| <input type="checkbox"/> | 6 | GE6 | Disabled | Disabled | 256 | 3600 | 60 | 60 | 30 | 30 | 30 | 2 |
| <input type="checkbox"/> | 7 | GE7 | Disabled | Disabled | 256 | 3600 | 60 | 60 | 30 | 30 | 30 | 2 |
| <input type="checkbox"/> | 8 | GE8 | Disabled | Disabled | 256 | 3600 | 60 | 60 | 30 | 30 | 30 | 2 |
| <input type="checkbox"/> | 9 | GE9 | Disabled | Disabled | 256 | 3600 | 60 | 60 | 30 | 30 | 30 | 2 |
| <input type="checkbox"/> | 10 | GE10 | Disabled | Disabled | 256 | 3600 | 60 | 60 | 30 | 30 | 30 | 2 |
| <input type="checkbox"/> | 11 | GE11 | Disabled | Disabled | 256 | 3600 | 60 | 60 | 30 | 30 | 30 | 2 |
| <input type="checkbox"/> | 12 | GE12 | Disabled | Disabled | 256 | 3600 | 60 | 60 | 30 | 30 | 30 | 2 |
| <input type="checkbox"/> | 13 | GE13 | Disabled | Disabled | 256 | 3600 | 60 | 60 | 30 | 30 | 30 | 2 |
| <input type="checkbox"/> | 14 | GE14 | Disabled | Disabled | 256 | 3600 | 60 | 60 | 30 | 30 | 30 | 2 |
| <input type="checkbox"/> | 15 | GE15 | Disabled | Disabled | 256 | 3600 | 60 | 60 | 30 | 30 | 30 | 2 |
| <input type="checkbox"/> | 16 | GE16 | Disabled | Disabled | 256 | 3600 | 60 | 60 | 30 | 30 | 30 | 2 |
| <input type="checkbox"/> | 17 | GE17 | Disabled | Disabled | 256 | 3600 | 60 | 60 | 30 | 30 | 30 | 2 |
| <input type="checkbox"/> | 18 | GE18 | Disabled | Disabled | 256 | 3600 | 60 | 60 | 30 | 30 | 30 | 2 |
| <input type="checkbox"/> | 19 | GE19 | Disabled | Disabled | 256 | 3600 | 60 | 60 | 30 | 30 | 30 | 2 |
| <input type="checkbox"/> | 20 | GE20 | Disabled | Disabled | 256 | 3600 | 60 | 60 | 30 | 30 | 30 | 2 |
| <input type="checkbox"/> | 21 | GE21 | Disabled | Disabled | 256 | 3600 | 60 | 60 | 30 | 30 | 30 | 2 |
| <input type="checkbox"/> | 22 | GE22 | Disabled | Disabled | 256 | 3600 | 60 | 60 | 30 | 30 | 30 | 2 |
| <input type="checkbox"/> | 23 | GE23 | Disabled | Disabled | 256 | 3600 | 60 | 60 | 30 | 30 | 30 | 2 |
| <input type="checkbox"/> | 24 | GE24 | Disabled | Disabled | 256 | 3600 | 60 | 60 | 30 | 30 | 30 | 2 |
| <input type="checkbox"/> | 25 | GE25 | Disabled | Disabled | 256 | 3600 | 60 | 60 | 30 | 30 | 30 | 2 |
| <input type="checkbox"/> | 26 | GE26 | Disabled | Disabled | 256 | 3600 | 60 | 60 | 30 | 30 | 30 | 2 |
| <input type="checkbox"/> | 27 | GE27 | Disabled | Disabled | 256 | 3600 | 60 | 60 | 30 | 30 | 30 | 2 |
| <input type="checkbox"/> | 28 | GE28 | Disabled | Disabled | 256 | 3600 | 60 | 60 | 30 | 30 | 30 | 2 |

Edit

Figure 95 - Security > Authentication Manager > Port Setting

| Item | Description |
|------------------|--|
| Port | Port |
| Port Control | <p>Support following authentication port control types.</p> <ul style="list-style-type: none"> ● Disable: Disable authentication function and all clients have network accessibility. ● Force Authorized: Port is force authorized and all clients have network accessibility. ● Force Unauthorized: Port is force unauthorized and all clients have no network accessibility. ● Auto: Need passing authentication procedure to get network accessibility. |
| Reauthentication | <p>Reauthenticate state</p> <ul style="list-style-type: none"> ● Enabled: Host will be reauthenticated after reauthentication period. ● Disabled: Host will not be reauthenticated after reauthentication |

| | |
|------------------------------------|--|
| | period. |
| Max Hosts | In Multiple Authentication mode, total host number cannot not exceed max hosts number. |
| Common Timer (Reauthentication) | After re-authenticate period, host will return to initial state and need to pass authentication procedure again. |
| Common Timer (Inactive) | If no packet from the authenticated host, the inactive timer will increase. After inactive timeout, the host will be unauthorized and corresponding session will be deleted. In multi-host mode, the packet is counting on the authorized host only. |
| Common Timer (Quiet) | When port is in Locked state after authenticating fail several times, the host will be locked in quiet period. After this quiet period, the host is allowed to authenticate again. |
| 802.1X Params (TX Period) | Number of seconds that the device waits for a response to an Extensible Authentication Protocol (EAP) request/identity frame from the supplicant (client) before resending the request. |
| 802.1X Params (Supplicant Timeout) | The maximum number of EAP requests that can be sent. If a response is not received after the defined period (supplicant timeout), the authentication process is restarted. |
| 802.1X Params (Server Timeout) | Number of seconds that lapses before EAP requests are resent to the supplicant. |
| 802.1X Params (Max Request) | Number of seconds that lapses before the device resends a request to the authentication server. |

Click "Edit" button to view Edit Port Setting menu.

Edit Port Setting

Port GE1

Port Control

Disabled
 Force Authorized
 Force Unauthorized
 Auto

Reauthentication

Enable

Max Hosts (1 - 256, default 256)

Common Timer

Reauthentication Sec (300 - 4294967294, default 3600)

Inactive Sec (60 - 65535, default 60)

Quiet Sec (0 - 65535, default 60)

802.1x Parameters

TX Period Sec (1 - 65535, default 30)

Supplicant Timeout Sec (1 - 65535, default 30)

Server Timeout Sec (1 - 65535, default 30)

Max Request (1 - 10, default 2)

Figure 96 - Security > Authentication Manager > Port Setting > Edit Port Setting

| Item | Description |
|---------------------|---|
| Port | Port Name. |
| Port Control | Support following authentication port control types. <ul style="list-style-type: none"> ● Disable: Disable authentication function and all clients have network accessibility. ● Force Authorized: Port is force authorized and all clients have network accessibility. ● Force Unauthorized: Port is force unauthorized and all clients have no network accessibility. ● Auto: Need passing authentication procedure to get network accessibility. |
| Reauthentication | Set checkbox to enable/disable reauthentication. |
| Max Hosts | In Multiple Authentication mode, total host number cannot not exceed max hosts number. |
| Common Timer | |
| Reauthentication | After re-authenticate period, host will return to initial state and need |

| | |
|--------------------|--|
| | to pass authentication procedure again. |
| Inactive | If no packet from the authenticated host, the inactive timer will increase. After inactive timeout, the host will be unauthorized and corresponding session will be deleted. In multi-host mode, the packet is counting on the authorized host only and not all packets on the port. |
| Quiet | When port is in Locked state after authenticating fail several times, the host will be locked in quiet period. After this quiet period, the host is allowed to authenticate again. |
| 802.1X Params | |
| TX Period | Number of seconds that the device waits for a response to an Extensible Authentication Protocol (EAP) request/identity frame from the supplicant (client) before resending the request. |
| Supplicant Timeout | The maximum number of EAP requests that can be sent. If a response is not received after the defined period (supplicant timeout), the authentication process is restarted. |
| Server Timeout | Number of seconds that lapses before EAP requests are resent to the supplicant. |
| Max Request | Number of seconds that lapses before the device resends a request to the authentication server. |

IV-9-3-3 Sessions

This page show all detail information of authentication sessions and allow user to select specific session to delete by clicking “Clear ” button.

To display Sessions web page, click **Security > Authentication Manger > Sessions**.

Figure 97 - Security > Authentication Manager > Sessions

| Item | Description |
|--------------|--|
| Session ID | Session ID is unique of each session. |
| Port | Port name which the host located. |
| MAC Address | Host MAC address. |
| Current Type | Show current authenticating type ● 802.1x: Use IEEE 802.1X to do authenticating |
| Status | Show host authentication session status IP version (IPv4, IPv6) |

| | |
|--------------------------------------|---|
| | <ul style="list-style-type: none"> ● Disable: This session is ready to be deleted ● Running: Authentication process is running ● Authorized: Authentication is passed and getting network accessibility. ● Unauthorized: Authentication is not passed and not getting network accessibility. ● Locked: Host is locked and do not allow to do authenticating until quiet period. ● Guest: Host is in the guest VLAN. |
| Operational (VLAN) | Shows host operational VLAN ID. |
| Operational (Session Time) | In "Authorized" state, it shows total time after authorized. |
| Operational (Inactived) | In "Authorized" state, it shows how long the host do not send any packet. |
| Operational (Quiet Time) | In "Locked" state, it shows total time after locked. |
| Authorized (VLAN) | Shows VLAN ID given from authorized procedure. |
| Authorized (Reauthentication Period) | Shows reauthentication period given from authorized procedure. |
| Authorized (Inactive Timeouts) | Shows inactive timeout given from authorized procedure. |

IV-9-4 Port Security

This page allows user to configure port security settings for each interface. When port security is enabled on interface, action will be perform once learned MAC address over limitation.

To display Port Security web page, click **Security > Port Security**.

State Enable

Apply

Port Security Table

| Entry | Port | State | MAC Address | Action |
|--------------------------|------|-------|-------------|-----------|
| <input type="checkbox"/> | 1 | GE1 | Disabled | 1 Discard |
| <input type="checkbox"/> | 2 | GE2 | Disabled | 1 Discard |
| <input type="checkbox"/> | 3 | GE3 | Disabled | 1 Discard |
| <input type="checkbox"/> | 4 | GE4 | Disabled | 1 Discard |
| <input type="checkbox"/> | 5 | GE5 | Disabled | 1 Discard |
| <input type="checkbox"/> | 6 | GE6 | Disabled | 1 Discard |
| <input type="checkbox"/> | 7 | GE7 | Disabled | 1 Discard |
| <input type="checkbox"/> | 8 | GE8 | Disabled | 1 Discard |
| <input type="checkbox"/> | 9 | GE9 | Disabled | 1 Discard |
| <input type="checkbox"/> | 10 | GE10 | Disabled | 1 Discard |
| <input type="checkbox"/> | 11 | GE11 | Disabled | 1 Discard |
| <input type="checkbox"/> | 12 | GE12 | Disabled | 1 Discard |
| <input type="checkbox"/> | 13 | GE13 | Disabled | 1 Discard |
| <input type="checkbox"/> | 14 | GE14 | Disabled | 1 Discard |
| <input type="checkbox"/> | 15 | GE15 | Disabled | 1 Discard |
| <input type="checkbox"/> | 16 | GE16 | Disabled | 1 Discard |
| <input type="checkbox"/> | 17 | GE17 | Disabled | 1 Discard |
| <input type="checkbox"/> | 18 | GE18 | Disabled | 1 Discard |
| <input type="checkbox"/> | 19 | GE19 | Disabled | 1 Discard |
| <input type="checkbox"/> | 20 | GE20 | Disabled | 1 Discard |
| <input type="checkbox"/> | 21 | GE21 | Disabled | 1 Discard |
| <input type="checkbox"/> | 22 | GE22 | Disabled | 1 Discard |
| <input type="checkbox"/> | 23 | GE23 | Disabled | 1 Discard |
| <input type="checkbox"/> | 24 | GE24 | Disabled | 1 Discard |
| <input type="checkbox"/> | 25 | GE25 | Disabled | 1 Discard |
| <input type="checkbox"/> | 26 | GE26 | Disabled | 1 Discard |
| <input type="checkbox"/> | 27 | GE27 | Disabled | 1 Discard |
| <input type="checkbox"/> | 28 | GE28 | Disabled | 1 Discard |
| <input type="checkbox"/> | 29 | LAG1 | Disabled | 1 Discard |
| <input type="checkbox"/> | 30 | LAG2 | Disabled | 1 Discard |
| <input type="checkbox"/> | 31 | LAG3 | Disabled | 1 Discard |
| <input type="checkbox"/> | 32 | LAG4 | Disabled | 1 Discard |
| <input type="checkbox"/> | 33 | LAG5 | Disabled | 1 Discard |
| <input type="checkbox"/> | 34 | LAG6 | Disabled | 1 Discard |
| <input type="checkbox"/> | 35 | LAG7 | Disabled | 1 Discard |
| <input type="checkbox"/> | 36 | LAG8 | Disabled | 1 Discard |

Edit

Figure 98 - Security > Port Security

| Item | Description |
|-------------|---|
| State | Enable/Disable the port security function. |
| Port | Select one or multiple ports to configure. |
| State | Select the status of port security <ul style="list-style-type: none"> ● Disable: Disable port security function. ● Enable: Enable port security function. |
| MAC Address | Specify the number of how many mac addresses can be learned. |

| | |
|--------|--|
| Action | Select the action if learned mac addresses <ul style="list-style-type: none"> ● Forward: Forward this packet whose SMAC is new to system and exceed the learning-limit number. ● Discard: Discard this packet whose SMAC is new to system and exceed the learning-limit number. ● Shutdown: Shutdown this port when receives a packet whose SMAC is new to system and exceed the learning limit number. |
|--------|--|

Click "Edit" button to view Edit Port Security menu.

Figure 99 - Security > Port Security > Edd Port Security

| Item | Description |
|-------------|--|
| Port | Select one or multiple ports to configure. |
| State | Select the status of port security Disable: Disable port security function. Enable: Enable port security function. |
| MAC Address | Specify the number of how many mac addresses can be learned. |
| Action | Select the action if learned mac addresses <ul style="list-style-type: none"> ● Forward: Forward this packet whose SMAC is new to system and exceed the learning-limit number. ● Discard: Discard this packet whose SMAC is new to system and exceed the learning-limit number. ● Shutdown: Shutdown this port when receives a packet whose SMAC is new to system and exceed the learning limit number. |

IV-9-5 Protected Port

This page allows user to configure protected port setting to prevent the selected ports from communication with each other. Protected port is only allowed to communicate with unprotected port. In other words, protected port is not allowed to communicate with another protected port.

To display Protected Port web page, click **Security > Protected Port**.

Protected Port Table

Q

| <input type="checkbox"/> | Entry | Port | State |
|--------------------------|-------|------|-------------|
| <input type="checkbox"/> | 1 | GE1 | Unprotected |
| <input type="checkbox"/> | 2 | GE2 | Unprotected |
| <input type="checkbox"/> | 3 | GE3 | Unprotected |
| <input type="checkbox"/> | 4 | GE4 | Unprotected |
| <input type="checkbox"/> | 5 | GE5 | Unprotected |
| <input type="checkbox"/> | 6 | GE6 | Unprotected |
| <input type="checkbox"/> | 7 | GE7 | Unprotected |
| <input type="checkbox"/> | 8 | GE8 | Unprotected |
| <input type="checkbox"/> | 9 | GE9 | Unprotected |
| <input type="checkbox"/> | 10 | GE10 | Unprotected |
| <input type="checkbox"/> | 11 | GE11 | Unprotected |
| <input type="checkbox"/> | 12 | GE12 | Unprotected |
| <input type="checkbox"/> | 13 | GE13 | Unprotected |
| <input type="checkbox"/> | 14 | GE14 | Unprotected |
| <input type="checkbox"/> | 15 | GE15 | Unprotected |
| <input type="checkbox"/> | 16 | GE16 | Unprotected |
| <input type="checkbox"/> | 17 | GE17 | Unprotected |
| <input type="checkbox"/> | 18 | GE18 | Unprotected |
| <input type="checkbox"/> | 19 | GE19 | Unprotected |
| <input type="checkbox"/> | 20 | GE20 | Unprotected |
| <input type="checkbox"/> | 21 | GE21 | Unprotected |
| <input type="checkbox"/> | 22 | GE22 | Unprotected |
| <input type="checkbox"/> | 23 | GE23 | Unprotected |
| <input type="checkbox"/> | 24 | GE24 | Unprotected |
| <input type="checkbox"/> | 25 | GE25 | Unprotected |
| <input type="checkbox"/> | 26 | GE26 | Unprotected |
| <input type="checkbox"/> | 27 | GE27 | Unprotected |
| <input type="checkbox"/> | 28 | GE28 | Unprotected |

Edit

Figure 100 - Security > Protected Port

| Item | Description |
|-------|---|
| Port | Port Name. |
| State | Port protected admin state. <ul style="list-style-type: none"> ● Protected: Port is protected. ● Unprotected: Port is unprotected |

Click "**Edit**" button to view Edit Protected Port menu.

Figure 101 - Security > Protected Port > Edit Protected Port

| Item | Description |
|-------|---|
| Port | Selected port list. |
| State | Port protected admin state. <ul style="list-style-type: none"> ● Protected: Enable protecting function. ● Unprotected: Disable protecting function. |

IV-9-6 Storm Control

To display Storm Control global setting web page, click **Security > Storm Control**.

Mode

Packet / Sec
 Kbits / Sec

IFG

Exclude
 Include

Port Setting Table

| Entry | Port | State | Broadcast | | Unknown Multicast | | Unknown Unicast | | Action | |
|--------------------------|------|-------|-----------|-------------|-------------------|-------------|-----------------|-------------|--------|------|
| | | | State | Rate (Kbps) | State | Rate (Kbps) | State | Rate (Kbps) | | |
| <input type="checkbox"/> | 1 | GE1 | Disabled | Disabled | 10000 | Disabled | 10000 | Disabled | 10000 | Drop |
| <input type="checkbox"/> | 2 | GE2 | Disabled | Disabled | 10000 | Disabled | 10000 | Disabled | 10000 | Drop |
| <input type="checkbox"/> | 3 | GE3 | Disabled | Disabled | 10000 | Disabled | 10000 | Disabled | 10000 | Drop |
| <input type="checkbox"/> | 4 | GE4 | Disabled | Disabled | 10000 | Disabled | 10000 | Disabled | 10000 | Drop |
| <input type="checkbox"/> | 5 | GE5 | Disabled | Disabled | 10000 | Disabled | 10000 | Disabled | 10000 | Drop |
| <input type="checkbox"/> | 6 | GE6 | Disabled | Disabled | 10000 | Disabled | 10000 | Disabled | 10000 | Drop |
| <input type="checkbox"/> | 7 | GE7 | Disabled | Disabled | 10000 | Disabled | 10000 | Disabled | 10000 | Drop |
| <input type="checkbox"/> | 8 | GE8 | Disabled | Disabled | 10000 | Disabled | 10000 | Disabled | 10000 | Drop |
| <input type="checkbox"/> | 9 | GE9 | Disabled | Disabled | 10000 | Disabled | 10000 | Disabled | 10000 | Drop |
| <input type="checkbox"/> | 10 | GE10 | Disabled | Disabled | 10000 | Disabled | 10000 | Disabled | 10000 | Drop |
| <input type="checkbox"/> | 11 | GE11 | Disabled | Disabled | 10000 | Disabled | 10000 | Disabled | 10000 | Drop |
| <input type="checkbox"/> | 12 | GE12 | Disabled | Disabled | 10000 | Disabled | 10000 | Disabled | 10000 | Drop |
| <input type="checkbox"/> | 13 | GE13 | Disabled | Disabled | 10000 | Disabled | 10000 | Disabled | 10000 | Drop |
| <input type="checkbox"/> | 14 | GE14 | Disabled | Disabled | 10000 | Disabled | 10000 | Disabled | 10000 | Drop |
| <input type="checkbox"/> | 15 | GE15 | Disabled | Disabled | 10000 | Disabled | 10000 | Disabled | 10000 | Drop |
| <input type="checkbox"/> | 16 | GE16 | Disabled | Disabled | 10000 | Disabled | 10000 | Disabled | 10000 | Drop |
| <input type="checkbox"/> | 17 | GE17 | Disabled | Disabled | 10000 | Disabled | 10000 | Disabled | 10000 | Drop |
| <input type="checkbox"/> | 18 | GE18 | Disabled | Disabled | 10000 | Disabled | 10000 | Disabled | 10000 | Drop |
| <input type="checkbox"/> | 19 | GE19 | Disabled | Disabled | 10000 | Disabled | 10000 | Disabled | 10000 | Drop |
| <input type="checkbox"/> | 20 | GE20 | Disabled | Disabled | 10000 | Disabled | 10000 | Disabled | 10000 | Drop |
| <input type="checkbox"/> | 21 | GE21 | Disabled | Disabled | 10000 | Disabled | 10000 | Disabled | 10000 | Drop |
| <input type="checkbox"/> | 22 | GE22 | Disabled | Disabled | 10000 | Disabled | 10000 | Disabled | 10000 | Drop |
| <input type="checkbox"/> | 23 | GE23 | Disabled | Disabled | 10000 | Disabled | 10000 | Disabled | 10000 | Drop |

Figure 102 - Security > Storm Control

| Item | Description |
|------------|--|
| Mode(Unit) | Select the unit of storm control <ul style="list-style-type: none"> ● Packet / Sec: storm control rate calculates by packet-based ● Kbits / Sec: storm control rate calculates by octet-based. |
| IFG | Select the rate calculates w/o preamble & IFG (20 bytes) <ul style="list-style-type: none"> ● Excluded: exclude preamble & IFG (20 bytes) when count ingress storm control rate. |

| | |
|--|--|
| | <ul style="list-style-type: none"> ● Included: include preamble & IFG (20 bytes) when count ingress storm control rate. |
|--|--|

Click "Edit" button to view Edit Port Setting menu.

Edit Port Setting

Port: GE1

State: Enable

Broadcast: Enable
 Kbps (16 - 1000000, default 10000)

Unknown Multicast: Enable
 Kbps (16 - 1000000, default 10000)

Unknown Unicast: Enable
 Kbps (16 - 1000000, default 10000)

Action: Drop Shutdown

Apply Close

Figure 103 - Security > Storm Control > Edit Port Setting

| Item | Description |
|-------------------|--|
| Port | Select the setting ports. |
| State | Select the state of setting Enable: Enable the storm control function. |
| Broadcast | Enable: Enable the storm control function of Broadcast packet. Value of storm control rate, Unit: pps (packet per-second, range 1- 262143) or Kbps (Kbits per-second, range16 - 1000000) depends on global mode setting. |
| Unknown Multicast | Enable: Enable the storm control function of Unknown multicast packet. Value of storm control rate, Unit: pps (packet per-second, range 1- 262143) or Kbps (Kbits per-second, range16 - 1000000) depends on global mode setting. |
| Unknown Unicast | Enable: Enable the storm control function of Unknown unicast packet. Value of storm control rate, Unit: pps (packet per-second, range 1 - 262143) or Kbps (Kbits per-second, range16 - 1000000) depends on global mode setting. |
| Action | Select the state of setting <ul style="list-style-type: none"> ● Drop: Packets exceed storm control rate will be dropped. ● Shutdown: Port will be shutdown when packets exceed storm control rate. |

IV-9-7 DoS

A Denial of Service (DoS) attack is a hacker attempt to make a device unavailable to its users. DoS attacks saturate the device with external communication requests, so that it cannot respond to legitimate traffic. These attacks usually lead to a device CPU overload.

The DoS protection feature is a set of predefined rules that protect the network from malicious attacks. The DoS Security Suite Settings enables activating the security suite.

IV-9-7-1 Property

To display Dos Global Setting web page, click **Security > Dos > Property**.

| | |
|--------------------|--|
| POD | <input checked="" type="checkbox"/> Enable |
| Land | <input checked="" type="checkbox"/> Enable |
| UDP Blat | <input checked="" type="checkbox"/> Enable |
| TCP Blat | <input checked="" type="checkbox"/> Enable |
| DMAC = SMAC | <input checked="" type="checkbox"/> Enable |
| Null Scan Attack | <input checked="" type="checkbox"/> Enable |
| X-Mas Scan Attack | <input checked="" type="checkbox"/> Enable |
| TCP SYN-FIN Attack | <input checked="" type="checkbox"/> Enable |
| TCP SYN-RST Attack | <input checked="" type="checkbox"/> Enable |
| ICMP Fragment | <input checked="" type="checkbox"/> Enable |
| TCP-SYN | <input checked="" type="checkbox"/> Enable Note: Source Port < 1024 |
| TCP Fragment | <input checked="" type="checkbox"/> Enable Note: Offset = 1 |
| Ping Max Size | <input checked="" type="checkbox"/> Enable IPv4 <input checked="" type="checkbox"/> Enable IPv6 <input type="text" value="512"/> Byte (0 - 65535, default 512) |
| TCP Min Hdr size | <input checked="" type="checkbox"/> Enable <input type="text" value="20"/> Byte (0 - 31, default 20) |
| IPv6 Min Fragment | <input checked="" type="checkbox"/> Enable <input type="text" value="1240"/> Byte (0 - 65535, default 1240) |
| Smurf Attack | <input checked="" type="checkbox"/> Enable <input type="text" value="0"/> Netmask Length (0 - 32, default 0) |

Figure 104 - Security > DoS > Property

| Item | Description |
|----------|--|
| POD | Avoids ping of death attack. |
| Land | Drops the packets if the source IP address is equal to the destination IP address. |
| UDP Blat | Drops the packets if the UDP source port equals to the UDP |

| | |
|---------------------------|--|
| | destination port. |
| TCP Blat | Drops the packages if the TCP source port is equal to the TCP destination port. |
| DMAC = SMAC | Drops the packets if the destination MAC address is equal to the source MAC address. |
| Null Scan Attack | Drops the packets with NULL scan. |
| X-Mas Scan Attack | Drops the packets if the sequence number is zero, and the FIN, URG and PSH bits are set. |
| TCP SYN-FIN Attack | Drops the packets with SYN and FIN bits set. |
| TCP SYN-RST Attack | Drops the packets with SYN and RST bits set |
| ICMP Fragment | Drops the fragmented ICMP packets. |
| TCP SYN (SPORT<1024) | Drops SYN packets with sport less than 1024. |
| TCP Fragment (Offset = 1) | Drops the TCP fragment packets with offset equals to one. |
| Ping Max Size | Specify the maximum size of the ICMPv4/ICMPv6 ping packets. The valid range is from 0 to 65535 bytes, and the default value is 512 bytes. |
| IPv6 Min Fragment | Checks the minimum size of IPv6 fragments, and drops the packets smaller than the minimum size. The valid range is from 0 to 65535 bytes, and default value is 1240 bytes. |
| Smurf Attack | Avoids smurf attack. The length range of the netmask is from 0 to 323 bytes, and default length is 0 bytes. |

IV-9-7-2 Port Setting

To configure and display the state of DoS protection for interfaces, click **Security > DoS > Port Setting**.

Port Setting Table

🔍

| <input type="checkbox"/> | Entry | Port | State |
|--------------------------|-------|------|----------|
| <input type="checkbox"/> | 1 | GE1 | Disabled |
| <input type="checkbox"/> | 2 | GE2 | Disabled |
| <input type="checkbox"/> | 3 | GE3 | Disabled |
| <input type="checkbox"/> | 4 | GE4 | Disabled |
| <input type="checkbox"/> | 5 | GE5 | Disabled |
| <input type="checkbox"/> | 6 | GE6 | Disabled |
| <input type="checkbox"/> | 7 | GE7 | Disabled |
| <input type="checkbox"/> | 8 | GE8 | Disabled |
| <input type="checkbox"/> | 9 | GE9 | Disabled |
| <input type="checkbox"/> | 10 | GE10 | Disabled |
| <input type="checkbox"/> | 11 | GE11 | Disabled |
| <input type="checkbox"/> | 12 | GE12 | Disabled |
| <input type="checkbox"/> | 13 | GE13 | Disabled |
| <input type="checkbox"/> | 14 | GE14 | Disabled |
| <input type="checkbox"/> | 15 | GE15 | Disabled |
| <input type="checkbox"/> | 16 | GE16 | Disabled |
| <input type="checkbox"/> | 17 | GE17 | Disabled |
| <input type="checkbox"/> | 18 | GE18 | Disabled |
| <input type="checkbox"/> | 19 | GE19 | Disabled |
| <input type="checkbox"/> | 20 | GE20 | Disabled |
| <input type="checkbox"/> | 21 | GE21 | Disabled |
| <input type="checkbox"/> | 22 | GE22 | Disabled |
| <input type="checkbox"/> | 23 | GE23 | Disabled |
| <input type="checkbox"/> | 24 | GE24 | Disabled |
| <input type="checkbox"/> | 25 | GE25 | Disabled |
| <input type="checkbox"/> | 26 | GE26 | Disabled |
| <input type="checkbox"/> | 27 | GE27 | Disabled |
| <input type="checkbox"/> | 28 | GE28 | Disabled |

Figure 105 - Security > DoS > Port Setting

| Item | Description |
|-------|---|
| Port | Interface or port number. |
| State | Enable/Disable the DoS protection on the interface. |

IV-9-8 DHCP Snooping

Use the DHCP Snooping pages to configure settings of DHCP Snooping.

IV-9-8-1 Property

This page allows user to configure global and per interface settings of DHCP Snooping.

To display property page, click **Security > DHCP Snooping > Property**.

The screenshot displays the configuration interface for DHCP Snooping. At the top, there is a 'State' section with an 'Enable' checkbox. Below this, there are two lists: 'Available VLAN' and 'Selected VLAN'. The 'Available VLAN' list contains 'VLAN 1', and the 'Selected VLAN' list is currently empty. There are right and left arrow buttons between the two lists. Below the lists is an 'Apply' button.

Below the configuration section is a 'Port Setting Table' with a search bar. The table has the following columns: Entry, Port, Trust, Verify Chaddr, and Rate Limit. The table contains 19 rows of data, all with 'Disabled' values for Trust and Verify Chaddr, and 'Unlimited' for Rate Limit.

| Entry | Port | Trust | Verify Chaddr | Rate Limit |
|-------|------|----------|---------------|------------|
| 1 | GE1 | Disabled | Disabled | Unlimited |
| 2 | GE2 | Disabled | Disabled | Unlimited |
| 3 | GE3 | Disabled | Disabled | Unlimited |
| 4 | GE4 | Disabled | Disabled | Unlimited |
| 5 | GE5 | Disabled | Disabled | Unlimited |
| 6 | GE6 | Disabled | Disabled | Unlimited |
| 7 | GE7 | Disabled | Disabled | Unlimited |
| 8 | GE8 | Disabled | Disabled | Unlimited |
| 9 | GE9 | Disabled | Disabled | Unlimited |
| 10 | GE10 | Disabled | Disabled | Unlimited |
| 11 | GE11 | Disabled | Disabled | Unlimited |
| 12 | GE12 | Disabled | Disabled | Unlimited |
| 13 | GE13 | Disabled | Disabled | Unlimited |
| 14 | GE14 | Disabled | Disabled | Unlimited |
| 15 | GE15 | Disabled | Disabled | Unlimited |
| 16 | GE16 | Disabled | Disabled | Unlimited |
| 17 | GE17 | Disabled | Disabled | Unlimited |
| 18 | GE18 | Disabled | Disabled | Unlimited |
| 19 | GE19 | Disabled | Disabled | Unlimited |

Figure 106 - Security > DHCP Snooping > Property

| Item | Description |
|--------------------|---|
| State | Set checkbox to enable/disable DHCP Snooping function. |
| VLAN | Select VLANs in left box then move to right to enable DHCP Snooping. Or select VLANs in right box then move to left to disable DHCP Snooping. |
| Port Setting Table | |
| Port | Display port ID. |
| Trust | Display enable/disabled trust attribute of interface. |
| Verify Chaddr | Display enable/disabled chaddr validation attribute of interface. |
| Rate Limit | Display rate limitation value of interface. |

Click "**Edit**" button to view Edit Port Setting menu.

Figure 107 - Security > DHCP Snooping > Property > Edit Port Setting

| Item | Description |
|---------------|---|
| Port | Display selected port to be edited |
| Trust | Set checkbox to enable/disabled trust of interface. All DHCP packet will be forward directly if enable trust. Default is disabled. |
| Verify Chaddr | Set checkbox to enable or disable chaddr validation of interface. All DHCP packets will be checked whether client hardware mac address is same as source mac in Ethernet header if enable chaddr validation. Default is disabled. |
| Rate Limit | Input rate limitation of DHCP packets. The unit is pps. 0 means unlimited. Default is unlimited. |

IV-9-8-2 Statistics

This page allows user to browse all statistics that recorded by DHCP snooping function.

To view the Statistics menu, navigate to **Security > DHCP Snooping > Statistics**.

Statistics Table

Q

| <input type="checkbox"/> | Entry | Port | Forward | Chaddr Check Drop | Untrust Port Drop | Untrust Port with Option82 Drop | Invalid Drop |
|--------------------------|-------|------|---------|-------------------|-------------------|---------------------------------|--------------|
| <input type="checkbox"/> | 1 | GE1 | 0 | 0 | 0 | 0 | 0 |
| <input type="checkbox"/> | 2 | GE2 | 0 | 0 | 0 | 0 | 0 |
| <input type="checkbox"/> | 3 | GE3 | 0 | 0 | 0 | 0 | 0 |
| <input type="checkbox"/> | 4 | GE4 | 0 | 0 | 0 | 0 | 0 |
| <input type="checkbox"/> | 5 | GE5 | 0 | 0 | 0 | 0 | 0 |
| <input type="checkbox"/> | 6 | GE6 | 0 | 0 | 0 | 0 | 0 |
| <input type="checkbox"/> | 7 | GE7 | 0 | 0 | 0 | 0 | 0 |
| <input type="checkbox"/> | 8 | GE8 | 0 | 0 | 0 | 0 | 0 |
| <input type="checkbox"/> | 9 | GE9 | 0 | 0 | 0 | 0 | 0 |
| <input type="checkbox"/> | 10 | GE10 | 0 | 0 | 0 | 0 | 0 |
| <input type="checkbox"/> | 11 | GE11 | 0 | 0 | 0 | 0 | 0 |
| <input type="checkbox"/> | 12 | GE12 | 0 | 0 | 0 | 0 | 0 |
| <input type="checkbox"/> | 13 | GE13 | 0 | 0 | 0 | 0 | 0 |
| <input type="checkbox"/> | 14 | GE14 | 0 | 0 | 0 | 0 | 0 |
| <input type="checkbox"/> | 15 | GE15 | 0 | 0 | 0 | 0 | 0 |
| <input type="checkbox"/> | 16 | GE16 | 0 | 0 | 0 | 0 | 0 |
| <input type="checkbox"/> | 17 | GE17 | 0 | 0 | 0 | 0 | 0 |
| <input type="checkbox"/> | 18 | GE18 | 0 | 0 | 0 | 0 | 0 |
| <input type="checkbox"/> | 19 | GE19 | 0 | 0 | 0 | 0 | 0 |
| <input type="checkbox"/> | 20 | GE20 | 0 | 0 | 0 | 0 | 0 |
| <input type="checkbox"/> | 21 | GE21 | 0 | 0 | 0 | 0 | 0 |
| <input type="checkbox"/> | 22 | GE22 | 0 | 0 | 0 | 0 | 0 |
| <input type="checkbox"/> | 23 | GE23 | 0 | 0 | 0 | 0 | 0 |
| <input type="checkbox"/> | 24 | GE24 | 0 | 0 | 0 | 0 | 0 |
| <input type="checkbox"/> | 25 | GE25 | 0 | 0 | 0 | 0 | 0 |
| <input type="checkbox"/> | 26 | GE26 | 0 | 0 | 0 | 0 | 0 |
| <input type="checkbox"/> | 27 | GE27 | 0 | 0 | 0 | 0 | 0 |
| <input type="checkbox"/> | 28 | GE28 | 0 | 0 | 0 | 0 | 0 |
| <input type="checkbox"/> | 29 | LAG1 | 0 | 0 | 0 | 0 | 0 |

Figure 108 - Security > DHCP Snooping > Statistics

| Item | Description |
|-----------|--|
| Port | Display port ID. |
| Forwarded | Display how many packets forwarded normally. |

| | |
|-----------------------------------|---|
| Chaddr Check Drop | Display how many packets dropped by chaddr validation. |
| Untrusted Port Drop | Display how many DHCP server packets that are received by untrusted port dropped. |
| Untrusted Port with Option82 Drop | Display how many packets dropped by untrusted port with option82 checking. |
| Invalid Drop | Display how many packets dropped by invalid checking. |

IV-9-8-3 Option82 Property

This page allows user to set string of DHCP option82 remote ID filed. The string will attach in option82 if option inserted.

To display Option82 Property page, click **Security > DHCP Snooping > Option82 Property**.

Remote ID User Defined

Operational Status

Remote ID 74:da:38:17:6e:7a (Switch Mac in Byte Order)

Apply

Port Setting Table

| Entry | Port | State | Allow Untrust |
|--------------------------|------|-------|---------------|
| <input type="checkbox"/> | 1 | GE1 | Disabled Drop |
| <input type="checkbox"/> | 2 | GE2 | Disabled Drop |
| <input type="checkbox"/> | 3 | GE3 | Disabled Drop |
| <input type="checkbox"/> | 4 | GE4 | Disabled Drop |
| <input type="checkbox"/> | 5 | GE5 | Disabled Drop |
| <input type="checkbox"/> | 6 | GE6 | Disabled Drop |
| <input type="checkbox"/> | 7 | GE7 | Disabled Drop |
| <input type="checkbox"/> | 8 | GE8 | Disabled Drop |
| <input type="checkbox"/> | 9 | GE9 | Disabled Drop |
| <input type="checkbox"/> | 10 | GE10 | Disabled Drop |
| <input type="checkbox"/> | 11 | GE11 | Disabled Drop |
| <input type="checkbox"/> | 12 | GE12 | Disabled Drop |
| <input type="checkbox"/> | 13 | GE13 | Disabled Drop |
| <input type="checkbox"/> | 14 | GE14 | Disabled Drop |
| <input type="checkbox"/> | 15 | GE15 | Disabled Drop |
| <input type="checkbox"/> | 16 | GE16 | Disabled Drop |
| <input type="checkbox"/> | 17 | GE17 | Disabled Drop |
| <input type="checkbox"/> | 18 | GE18 | Disabled Drop |
| <input type="checkbox"/> | 19 | GE19 | Disabled Drop |
| <input type="checkbox"/> | 20 | GE20 | Disabled Drop |
| <input type="checkbox"/> | 21 | GE21 | Disabled Drop |
| <input type="checkbox"/> | 22 | GE22 | Disabled Drop |

Figure 109 - Security > DHCP Snooping > Option82 Property

| Item | Description |
|--------------|---|
| User Defined | Set checkbox to enable user-defined remote-ID. By default, remote ID is switch mac in byte order. |

| | |
|--------------------|---|
| Remote ID | Input user-defined remote ID. Only available when enable user-define remote ID. |
| Port Setting Table | |
| Port | Display port ID. |
| State | Display option82 enable/disable status of interface. |
| Allow untrusted | Display allow untrusted action of interface. |

Click "Edit" button to view Edit Port Setting menu.

Figure 110 - DHCP Snooping > Option82 Property > Edit Port Setting

| Item | Description |
|-----------------|---|
| Port | Display selected port to be edited |
| State | Set checkbox to enable/disable option82 function of interface. |
| Allow untrusted | Select the action perform when untrusted port receive DHCP packet has option82 filed. Default is drop. <ul style="list-style-type: none"> ● Keep: Keep original option82 content. ● Replace: Replace option82 content by switch setting ● Drop: Drop packets with option82 |

IV-9-8-4 Option82 Circuit ID

This page allows user to set string of DHCP option82 circuit ID filed. The string will attach in option82 if option inserted.

To display Option82 Circuit ID page, click **Security > DHCP Snooping > Option82 Circuit ID**.

Option82 Circuit ID Table

Showing entries Showing 0 to 0 of 0 entries

| <input type="checkbox"/> | Port | VLAN | Circuit ID |
|--------------------------|------|------|------------|
| 0 results found. | | | |

Figure 111 - Security > DHCP Snooping > Option82 Circuit ID

| Item | Description |
|------------|-------------------------------------|
| Port | Display port ID of entry. |
| VLAN | Display associate VLAN of entry. |
| Circuit ID | Display circuit ID string of entry. |

Click **"Add"** button or **"Edit"** button to view the Add/Edit Option82 Circuit ID menu.

Add Option82 Circuit ID

Port:

VLAN: (1 - 4094) (Keep empty to set without VLAN)

Circuit ID:

Edit Option82 Circuit ID

Port:

VLAN:

Circuit ID:

Figure 112 - Security > DHCP Snooping > Option82 Circuit ID > Add/Edit Option82 Circuit ID

| Item | Description |
|------------|---|
| Port | Select port from list to associate to CID entry. Only available on Add dialog. |
| VLAN | Input VLAN ID to associate to circuit ID entry. VLAN ID is not mandatory. Only available on Add dialog. |
| Circuit ID | Input String as circuit ID. Packets match port and VLAN will be inserted circuit ID. |

IV-9-9 IP Source Guard

Use the IP Source Guard pages to configure settings of IP Source Guard.

IV-9-9-1 Port Setting

Use the IP Source Guard pages to configure settings of IP Source Guard.

To display Port Setting page, click **Security > IP Source Guard > Port Setting**.

Port Setting Table

Q

| <input type="checkbox"/> | Entry | Port | State | Verify Source | Current Entry | Max Entry |
|--------------------------|-------|------|----------|---------------|---------------|-----------|
| <input type="checkbox"/> | 1 | GE1 | Disabled | IP | 0 | Unlimited |
| <input type="checkbox"/> | 2 | GE2 | Disabled | IP | 0 | Unlimited |
| <input type="checkbox"/> | 3 | GE3 | Disabled | IP | 0 | Unlimited |
| <input type="checkbox"/> | 4 | GE4 | Disabled | IP | 0 | Unlimited |
| <input type="checkbox"/> | 5 | GE5 | Disabled | IP | 0 | Unlimited |
| <input type="checkbox"/> | 6 | GE6 | Disabled | IP | 0 | Unlimited |
| <input type="checkbox"/> | 7 | GE7 | Disabled | IP | 0 | Unlimited |
| <input type="checkbox"/> | 8 | GE8 | Disabled | IP | 0 | Unlimited |
| <input type="checkbox"/> | 9 | GE9 | Disabled | IP | 0 | Unlimited |
| <input type="checkbox"/> | 10 | GE10 | Disabled | IP | 0 | Unlimited |
| <input type="checkbox"/> | 11 | GE11 | Disabled | IP | 0 | Unlimited |
| <input type="checkbox"/> | 12 | GE12 | Disabled | IP | 0 | Unlimited |
| <input type="checkbox"/> | 13 | GE13 | Disabled | IP | 0 | Unlimited |
| <input type="checkbox"/> | 14 | GE14 | Disabled | IP | 0 | Unlimited |
| <input type="checkbox"/> | 15 | GE15 | Disabled | IP | 0 | Unlimited |
| <input type="checkbox"/> | 16 | GE16 | Disabled | IP | 0 | Unlimited |
| <input type="checkbox"/> | 17 | GE17 | Disabled | IP | 0 | Unlimited |
| <input type="checkbox"/> | 18 | GE18 | Disabled | IP | 0 | Unlimited |
| <input type="checkbox"/> | 19 | GE19 | Disabled | IP | 0 | Unlimited |
| <input type="checkbox"/> | 20 | GE20 | Disabled | IP | 0 | Unlimited |
| <input type="checkbox"/> | 21 | GE21 | Disabled | IP | 0 | Unlimited |
| <input type="checkbox"/> | 22 | GE22 | Disabled | IP | 0 | Unlimited |
| <input type="checkbox"/> | 23 | GE23 | Disabled | IP | 0 | Unlimited |
| <input type="checkbox"/> | 24 | GE24 | Disabled | IP | 0 | Unlimited |
| <input type="checkbox"/> | 25 | GE25 | Disabled | IP | 0 | Unlimited |
| <input type="checkbox"/> | 26 | GE26 | Disabled | IP | 0 | Unlimited |
| <input type="checkbox"/> | 27 | GE27 | Disabled | IP | 0 | Unlimited |
| <input type="checkbox"/> | 28 | GE28 | Disabled | IP | 0 | Unlimited |
| <input type="checkbox"/> | 29 | LAG1 | Disabled | IP | 0 | Unlimited |
| <input type="checkbox"/> | 30 | LAG2 | Disabled | IP | 0 | Unlimited |
| <input type="checkbox"/> | 31 | LAG3 | Disabled | IP | 0 | Unlimited |

Figure 113 Security > IP Source Guard > Port Setting

| Item | Description |
|-----------------------|---|
| Port | Display port ID. |
| State | Display IP Source Guard enable/disable status of interface. |
| Verify Source | Display mode of IP Source Guard verification |
| Current Binding Entry | Display current binding entries of a interface. |
| Max Binding Entry | Display the number of maximum binding entry of interface. |

Click "**Edit**" button to view the Edit Port Setting menu.

Figure 114 - Security > IP Source Guard > Port Setting > Edit Port Setting

| Item | Description |
|---------------|--|
| Port | Display selected port to be edited. |
| Status | Set checkbox to enable or disable IP Source Guard function. Default is disabled. |
| Verify Source | Select the mode of IP Source Guard verification <ul style="list-style-type: none"> ● IP: Only verify source IP address of packet. ● IP-MAC: Verify source IP and source MAC address of packet. |
| Max Entry | Input the maximum number of entries that a port can be bounded. Default is un-limited on all ports. No entry will be bound if limitation reached. |

IV-9-9-2 IMPV Binding

This page allows user to add static IP source guard entry and browse all IP source guard entries that learned by DHCP snooping or statically create by user.

To display IPMV Binding page, click **Security > IP Source Guard > IMPV Binding**.

The screenshot shows a web interface titled "IP-MAC-Port-VLAN Binding Table". At the top, it says "Showing All entries" and "Showing 0 to 0 of 0 entries". There is a search icon and a search input field. Below this is a table header with columns: Port, VLAN, MAC Address, IP Address, Binding, Type, and Lease Time. The table body is empty, displaying "0 results found.". At the bottom, there are buttons for "Add", "Edit", "Delete", "First", "Previous", "1", "Next", and "Last".

Figure 115 - Security > IP Source Guard > IMPV Binding

| Item | Description |
|-------------|---|
| Port | Display port ID of entry. |
| VLAN | Display VLAN ID of entry. |
| MAC Address | Display MAC address of entry. Only available of IP-MAC binding entry. |
| IP Address | Display IP address of entry. Mask always to be 255.255.255.255 for IP-MAC binding. IP binding entry display user input. |
| Binding | Display binding type of entry. |
| Type | Type of existing binding entry <ul style="list-style-type: none"> ● Static: Entry added by user. ● Dynamic: Entry learned by DHCP snooping. |
| Lease Time | Lease time of DHCP Snooping learned entry. After lease time entry will be deleted. Only available of dynamic entry. |

Click "Add" or "Edit" button to view the Add/Edit IP-MAC-Port-VLAN Binding menu.

Add IP-MAC-Port-VLAN Binding

| | |
|-------------|---|
| Port | GE1 ▾ |
| VLAN | <input type="text" value=""/> (1 - 4094) |
| Binding | <input checked="" type="radio"/> IP-MAC-Port-VLAN <input type="radio"/> IP-Port-VLAN |
| MAC Address | <input type="text" value=""/> |
| IP Address | <input type="text" value=""/> / <input type="text" value="255.255.255.255"/> |

Edit IP-MAC-Port-VLAN Binding

| | |
|-------------|--|
| Port | GE1 ▾ |
| VLAN | 20 |
| Binding | IP-MAC-Port-VLAN |
| MAC Address | 00:11:22:33:44:55 |
| IP Address | <input type="text" value="192.168.2.33"/> / <input type="text" value="255.255.255.255"/> |

Figure 116 - Security > IP Source Guard > Add/Edit IP-MAC-Port-VLAN Binding

| Item | Description |
|-------------|---|
| Port | Select port from list of a binding entry. |
| VLAN | Specify a VLAN ID of a binding entry. |
| Binding | Select matching mode of binding entry IP-MAC-Port-VLAN: packet must match IP address 、 MAC address 、 Port and VLAN ID. IP-Port-VLAN: packet must match IP address or subnet 、 Port and VLAN ID. |
| MAC Address | Input MAC address. Only available on IP-MAC-Port-VLAN mode. |
| IP Address | Input IP address and mask. Mask only available on IP-MAC-Port mode. |

IV-9-9-3 Save Database

This page allows user to configure DHCP snooping database which can backup and restore dynamic DHCP snooping entries.

To display Save Database page, click **Security > DHCP Snooping > Save Database**.

Figure 117 - Security > IP Source Guard > Save Database

| Item | Description |
|----------------|--|
| Type | Select the type of database agent. <ul style="list-style-type: none"> ● None: Disable database agent service. ● Flash: Save DHCP dynamic binding entries to flash. ● TFTP: Save DHCP dynamic binding entries to remote TFTP server. |
| Filename | Input filename for backup file. Only available when selecting type "flash" and "TFTP". |
| Address Type | Select the type of TFTP server. <ul style="list-style-type: none"> ● Hostname: TFTP server address is hostname. ● IPv4: TFTP server address is IPv4 address ● IPv6: TFTP server address is IPv6 address |
| Server Address | Input remote TFTP server hostname or IP address. Only available when selecting type "TFTP" |
| Write Delay | Input delay timer for doing backup after change happened. Default is 300 seconds. |
| Timeout | Input aborts timeout for doing backup failure. Default is 300 seconds. |

IV-10 ACL

Use the ACL pages to configure settings for the switch ACL features..

IV-10-1 MAC ACL

This page allows user to add or delete ACL rule. A rule cannot be deleted if under binding.

To display MAC ACL page, click **ACL > MAC ACL**.

The screenshot shows a web interface for configuring MAC ACLs. At the top, there is a text input field labeled 'ACL Name' with a dashed blue border. Below it is an 'Apply' button. The main section is titled 'ACL Table' and contains a dropdown menu set to 'All' entries, a search bar with a magnifying glass icon, and a table with columns for 'ACL Name', 'Rule', and 'Port'. The table currently displays '0 results found.' and a 'Delete' button is located at the bottom left. Navigation buttons for 'First', 'Previous', '1', 'Next', and 'Last' are at the bottom right.

Figure 118 - ACL > MAC ACL

| Item | Description |
|----------|---|
| ACL Name | Input MAC ACL name. |
| ACL Name | Display MAC ACL name. |
| Rule | Display the number ACE rule of ACL. |
| Port | Display the port list that bind this ACL. |

IV-10-2 MAC ACE

This page allows user to add, edit or delete ACE rule. An ACE rule cannot be edited or deleted if ACL under binding. New ACE cannot be added if ACL under binding.

To display MAC ACE page, click **ACL > MAC ACE**.

ACE Table

ACL Name

Showing entries Showing 0 to 0 of 0 entries

| Sequence | Action | Source MAC | | Destination MAC | | Ethertype | VLAN | 802.1p | |
|------------------|--------|------------|------|-----------------|------|-----------|------|--------|------|
| | | Address | Mask | Address | Mask | | | Value | Mask |
| 0 results found. | | | | | | | | | |

Figure 119 - ACL > MAC ACE

| Item | Description |
|-----------------|--|
| ACL Name | Select the ACL name to which an ACE is being added. |
| Sequence | Display the sequence of ACE. |
| Action | Display the action of ACE. |
| Source MAC | Display the source MAC address and mask of ACE. |
| Destination MAC | Display the destination MAC address and mask of ACE. |
| Ethertype | Display the Ethernet frame type of ACE. |
| VLAN ID | Display the VLAN ID of ACE. |
| 802.1p Value | Display the 802.1p value of ACE. |
| 802.1p Mask | Display the 802.1p mask of ACE. |

Click **“Edit”** button to view the Edit ACE menu.

Figure 120 - ACL > Edit ACE

| Item | Description |
|-----------------|---|
| ACL Name | Display the ACL name to which an ACE is being added.. |
| Sequence | Specify the sequence of the ACE. ACEs with higher sequence are processed first (1 is the highest priority). Only available on Add Dialog. |
| Action | Select the action after ACE match packet. <ul style="list-style-type: none"> ● Permit: Forward packets that meet the ACE criteria. ● Deny: Drop packets that meet the ACE criteria. ● Shutdown: Drop packets that meet the ACE criteria, and disable the port from where the packets were received. Such ports can be reactivated from the Port Settings page. |
| Source MAC | Select the type for source MAC address. <ul style="list-style-type: none"> ● Any: All source addresses are acceptable. ● User Defined: Only a source address or a range of source addresses which users define are acceptable. Enter the source MAC address and mask to which will be matched. |
| Destination MAC | Select the type for Destination MAC address. |

| | |
|-----------|--|
| | <ul style="list-style-type: none"> ● Any: All destination addresses are acceptable. ● User Defined: Only a destination address or a range of destination addresses which users define are acceptable. Enter the destination MAC address and mask to which will be matched. |
| Ethertype | <p>Select the type for Ethernet frame type.</p> <ul style="list-style-type: none"> ● Any: All Ethernet frame type is acceptable. ● User Defined: Only an Ethernet frame type which users define is acceptable. Enter the Ethernet frame type value to which will be matched. |
| VLAN | <p>Select the type for VLAN ID.</p> <ul style="list-style-type: none"> ● Any: All VLAN ID is acceptable. ● User Defined: Only a VLAN ID which users define is acceptable. Enter the VLAN ID to which will be matched. |
| 802.1p | <p>Select the type for 802.1p value.</p> <ul style="list-style-type: none"> ● Any: All 802.1p value is acceptable. ● User Defined: Only an 802.1p value or a range of 802.1p value which users define is acceptable. Enter the 802.1p value and mask to which will be matched. |

IV-10-3 IPv4 ACL

This page allows user to add or delete IPv4 ACL rule. A rule cannot be deleted if under binding.

To display IPv4 ACL page, click **ACL > IPv4 ACL**.

Figure 121 - ACL > IPv4 ACL

| Item | Description |
|----------|---|
| ACL Name | Input IPv4 ACL name. |
| ACL Name | Display IPv4 ACL name. |
| Rule | Display the number ACE rule of ACL. |
| Port | Display the port list that bind this ACL. |

IV-10-4 IPv4 ACE

This page allows user to add, edit or delete ACE rule. An ACE rule cannot be edited or deleted if ACL under binding. New ACE cannot be added if ACL under binding.

To display IPv4 ACE page, click **ACL > IPv4 ACE**.

The screenshot shows the 'ACE Table' interface. At the top, there is a search bar and a filter for 'ACL Name' set to 'None'. Below this, it indicates 'Showing 0 to 0 of 0 entries'. The table has the following columns: Sequence, Action, Protocol, Source IP (Address, Mask), Destination IP (Address, Mask), Source Port, Destination Port, TCP Flags, Type of Service (DSCP, IP Precedence), and ICMP (Type, Code). The table is currently empty, showing '0 results found.' and navigation buttons for 'First', 'Previous', '1', 'Next', and 'Last'.

Figure 122 - ACL > IPv4 ACE

| Item | Description |
|------------------|---|
| ACL Name | Select the ACL name to which an ACE is being added. |
| Sequence | Display the sequence of ACE. |
| Action | Display the action of ACE. |
| Protocol | Display the protocol value of ACE. |
| Source IP | Display the source IP address and mask of ACE. |
| Destination IP | Display the destination IP address and mask of ACE. |
| Source Port | Display single source port or a range of source ports of ACE. Only available when protocol is TCP or UDP. |
| Destination Port | Display single destination port or a range of destination ports of ACE. Only available when protocol is TCP or UDP. |
| TCP Flags | Display the TCP flag value if ACE. Only available when protocol is TCP. |
| Type of Service | Display the ToS value of ACE which could be DSCP or IP Precedence. |
| ICMP | Display the ICMP type and code of ACE. Only available when protocol is ICMP. |

Click "Add" or "Edit" button to view the Add/Edit ACE menu.

Edit ACE

| | |
|------------------|--|
| ACL Name | 777 |
| Sequence | 888 |
| Action | <input checked="" type="radio"/> Permit <input type="radio"/> Deny <input type="radio"/> Shutdown |
| Protocol | <input checked="" type="radio"/> Any <input type="radio"/> Select <input type="text" value="ICMP"/> <input type="radio"/> Define <input type="text" value=""/> (0 - 255) |
| Source IP | <input checked="" type="checkbox"/> Any <input type="text" value=""/> / <input type="text" value=""/> (Address / Mask) |
| Destination IP | <input checked="" type="checkbox"/> Any <input type="text" value=""/> / <input type="text" value=""/> (Address / Mask) |
| Type of Service | <input checked="" type="radio"/> Any <input type="radio"/> DSCP <input type="text" value=""/> (0 - 63) <input type="radio"/> IP Precedence <input type="text" value=""/> (0 - 7) |
| Source Port | <input checked="" type="radio"/> Any <input type="radio"/> Single <input type="text" value=""/> (0 - 65535) <input type="radio"/> Range <input type="text" value=""/> - <input type="text" value=""/> (0 - 65535) |
| Destination Port | <input checked="" type="radio"/> Any <input type="radio"/> Single <input type="text" value=""/> (0 - 65535) <input type="radio"/> Range <input type="text" value=""/> - <input type="text" value=""/> (0 - 65535) |
| TCP Flags | Urg: <input type="radio"/> Set <input type="radio"/> Unset <input checked="" type="radio"/> Don't care Ack: <input type="radio"/> Set <input type="radio"/> Unset <input checked="" type="radio"/> Don't care Psh: <input type="radio"/> Set <input type="radio"/> Unset <input checked="" type="radio"/> Don't care Rst: <input type="radio"/> Set <input type="radio"/> Unset <input checked="" type="radio"/> Don't care Syn: <input type="radio"/> Set <input type="radio"/> Unset <input checked="" type="radio"/> Don't care Fin: <input type="radio"/> Set <input type="radio"/> Unset <input checked="" type="radio"/> Don't care |
| ICMP Type | <input checked="" type="radio"/> Any <input type="radio"/> Select <input type="text" value="Echo Reply"/> <input type="radio"/> Define <input type="text" value=""/> (0 - 255) |
| ICMP Code | <input checked="" type="radio"/> Any <input type="radio"/> Define <input type="text" value=""/> (0 - 255) |

Figure 123 - ACL > Add/Edit ACE

| Item | Description |
|------------------|---|
| ACL Name | Display the ACL name to which an ACE is being added. |
| Sequence | Specify the sequence of the ACE. ACEs with higher sequence are processed first (1 is the highest sequence). Only available on Add dialog. |
| Action | <p>Select the action for a match.</p> <ul style="list-style-type: none"> ● Permit: Forward packets that meet the ACE criteria. ● Deny: Drop packets that meet the ACE criteria. ● Shutdown: Drop packets that meet the ACE criteria, and disable the port from where the packets were received. Such ports can be reactivated from the Port Settings page. |
| Protocol | <p>Select the type of protocol for a match.</p> <ul style="list-style-type: none"> ● Any (IP): All IP protocols are acceptable. ● Select from list: Select one of the following protocols from the drop-down list. ICMP/IPinIP/TCP/EGP/IGP/UDP/HMP/RDP/IPV6/IPV6:ROUT/IPV6:F RAG/ RSVP/IPV6:ICMP/OSPF/PIM/L2TP ● Protocol ID to match: Enter the protocol ID. |
| Source IP | <p>Select the type for source IP address.</p> <ul style="list-style-type: none"> ● Any: All source addresses are acceptable. ● User Defined: Only a source address or a range of source addresses which users define are acceptable. Enter the source IP address value and mask to which will be matched. |
| Destination IP | <p>Select the type for destination IP address.</p> <ul style="list-style-type: none"> ● Any: All destination addresses are acceptable. ● User Defined: Only a destination address or a range of destination addresses which users define are acceptable. Enter the destination IP address value and mask to which will be matched. |
| Source Port | <p>Select the type of protocol for a match. Only available when protocol is TCP or UDP.</p> <ul style="list-style-type: none"> ● Any: All source ports are acceptable. ● Single: Enter a single TCP/UDP source port to which packets are matched. ● Range: Select a range of TCP/UDP source ports to which the packet is matched. There are eight different port ranges that can be configured (shared between source and destination ports). TCP and UDP protocols each have eight port ranges. |
| Destination Port | <p>Select the type of protocol for a match. Only available when protocol is TCP or UDP.</p> <ul style="list-style-type: none"> ● Any: All source ports are acceptable. ● Single: Enter a single TCP/UDP source port to which packets are matched. ● Range: Select a range of TCP/UDP source ports to which the packet is matched. There are eight different port ranges that can be |

| | |
|-----------------|--|
| | configured (shared between source and destination ports). TCP and UDP protocols each have eight port ranges. |
| TCP Flags | Select one or more TCP flags with which to filter packets. Filtered packets are either forwarded or dropped. Filtering packets by TCP flags increases packet control, which increases network security. Only available when protocol is TCP. |
| Type of Service | Select the type of service for a match. <ul style="list-style-type: none"> ● Any: All types of service are acceptable. ● DSCP to match: Enter a Differentiated Services Code Point (DSCP) to match. ● IP Precedence to match: Enter a IP Precedence to match. |
| ICMP Type | Either select the message type by name or enter the message type number. Only available when protocol is ICMP. <ul style="list-style-type: none"> ● Any: All message types are acceptable. ● Select from list: Select message type by name. ● Protocol ID to match: Enter the number of message type. |
| ICMP Code | Select the type for ICMP code. Only available when protocol is ICMP. <ul style="list-style-type: none"> ● Any: All codes are acceptable. ● User Defined: Enter an ICMP code to match. |

IV-10-5 ACL Binding

This page allows user to bind or unbind ACL rule to or from interface. IPv4 and Ipv6 ACL cannot be bound to the same port simultaneously.

To display ACL Binding page, click **ACL > ACL Binding**.

The screenshot shows the 'ACL Binding Table' interface. It features a search bar at the top right. The table below has the following structure:

| Entry | Port | MAC ACL | IPv4 ACL |
|--------------------------|------|---------|----------|
| <input type="checkbox"/> | 1 | GE1 | |
| <input type="checkbox"/> | 2 | GE2 | |
| <input type="checkbox"/> | 3 | GE3 | |
| <input type="checkbox"/> | 4 | GE4 | |
| <input type="checkbox"/> | 5 | GE5 | |
| <input type="checkbox"/> | 6 | GE6 | |
| <input type="checkbox"/> | 7 | GE7 | |
| <input type="checkbox"/> | 8 | GE8 | |
| <input type="checkbox"/> | 9 | GE9 | |
| <input type="checkbox"/> | 10 | GE10 | |
| <input type="checkbox"/> | 11 | GE11 | |
| <input type="checkbox"/> | 12 | GE12 | |
| <input type="checkbox"/> | 13 | GE13 | |
| <input type="checkbox"/> | 14 | GE14 | |
| <input type="checkbox"/> | 15 | GE15 | |
| <input type="checkbox"/> | 16 | GE16 | |
| <input type="checkbox"/> | 17 | GE17 | |
| <input type="checkbox"/> | 18 | GE18 | |
| <input type="checkbox"/> | 19 | GE19 | |
| <input type="checkbox"/> | 20 | GE20 | |
| <input type="checkbox"/> | 21 | GE21 | |
| <input type="checkbox"/> | 22 | GE22 | |
| <input type="checkbox"/> | 23 | GE23 | |
| <input type="checkbox"/> | 24 | GE24 | |
| <input type="checkbox"/> | 25 | GE25 | |
| <input type="checkbox"/> | 26 | GE26 | |
| <input type="checkbox"/> | 27 | GE27 | |
| <input type="checkbox"/> | 28 | GE28 | |
| <input type="checkbox"/> | 29 | LAG1 | |
| <input type="checkbox"/> | 30 | LAG2 | |
| <input type="checkbox"/> | 31 | LAG3 | |
| <input type="checkbox"/> | 32 | LAG4 | |
| <input type="checkbox"/> | 33 | LAG5 | |
| <input type="checkbox"/> | 34 | LAG6 | |
| <input type="checkbox"/> | 35 | LAG7 | |
| <input type="checkbox"/> | 36 | LAG8 | |

At the bottom of the interface, there are three buttons: 'Bind', 'Unbind', and 'Edit'.

Figure 124 - ACL > ACL Binding

| Item | Description |
|----------|---|
| Port | Display port entry ID. |
| MAC ACL | Display mac ACL name that bound of interface. Empty means no rule bound. |
| IPv4 ACL | Display ipv4 ACL name that bound of interface. Empty means no rule bound. |

Click **“Edit”** button to view the Edit ACL Binding menu.

Edit ACL Binding

Port GE1
Note: ACL without any rules cannot be bound

MAC ACL None ▼

IPv4 ACL None ▼

Apply Close

Figure 125 - ACL > Edit ACL Binding

| Item | Description |
|----------|---|
| Port | Display port entry ID. |
| MAC ACL | Select mac ACL name from list to bind. |
| IPv4 ACL | Select IPv4 ACL name from list to bind. |

IV-11 QoS

Use the QoS pages to configure settings for the switch QoS interface.

IV-11-1 General

Use the QoS general pages to configure settings for general purpose.

IV-11-1-1 Property

To display Property web page, click **QoS > General > Property**.

State
 Enable
Trust Mode
 CoS
 IP Precedence

Port Setting Table

| Entry | Port | CoS | Trust | Remarking | | |
|--------------------------|------|------|-------|-----------|---------------|----------|
| | | | | CoS | IP Precedence | |
| <input type="checkbox"/> | 1 | GE1 | 0 | Enabled | Disabled | Disabled |
| <input type="checkbox"/> | 2 | GE2 | 0 | Enabled | Disabled | Disabled |
| <input type="checkbox"/> | 3 | GE3 | 0 | Enabled | Disabled | Disabled |
| <input type="checkbox"/> | 4 | GE4 | 0 | Enabled | Disabled | Disabled |
| <input type="checkbox"/> | 5 | GE5 | 0 | Enabled | Disabled | Disabled |
| <input type="checkbox"/> | 6 | GE6 | 0 | Enabled | Disabled | Disabled |
| <input type="checkbox"/> | 7 | GE7 | 0 | Enabled | Disabled | Disabled |
| <input type="checkbox"/> | 8 | GE8 | 0 | Enabled | Disabled | Disabled |
| <input type="checkbox"/> | 9 | GE9 | 0 | Enabled | Disabled | Disabled |
| <input type="checkbox"/> | 10 | GE10 | 0 | Enabled | Disabled | Disabled |
| <input type="checkbox"/> | 11 | GE11 | 0 | Enabled | Disabled | Disabled |
| <input type="checkbox"/> | 12 | GE12 | 0 | Enabled | Disabled | Disabled |
| <input type="checkbox"/> | 13 | GE13 | 0 | Enabled | Disabled | Disabled |
| <input type="checkbox"/> | 14 | GE14 | 0 | Enabled | Disabled | Disabled |
| <input type="checkbox"/> | 15 | GE15 | 0 | Enabled | Disabled | Disabled |
| <input type="checkbox"/> | 16 | GE16 | 0 | Enabled | Disabled | Disabled |
| <input type="checkbox"/> | 17 | GE17 | 0 | Enabled | Disabled | Disabled |
| <input type="checkbox"/> | 18 | GE18 | 0 | Enabled | Disabled | Disabled |
| <input type="checkbox"/> | 19 | GE19 | 0 | Enabled | Disabled | Disabled |
| <input type="checkbox"/> | 20 | GE20 | 0 | Enabled | Disabled | Disabled |
| <input type="checkbox"/> | 21 | GE21 | 0 | Enabled | Disabled | Disabled |
| <input type="checkbox"/> | 22 | GE22 | 0 | Enabled | Disabled | Disabled |
| <input type="checkbox"/> | 23 | GE23 | 0 | Enabled | Disabled | Disabled |
| <input type="checkbox"/> | 24 | GE24 | 0 | Enabled | Disabled | Disabled |
| <input type="checkbox"/> | 25 | GE25 | 0 | Enabled | Disabled | Disabled |
| <input type="checkbox"/> | 26 | GE26 | 0 | Enabled | Disabled | Disabled |
| <input type="checkbox"/> | 27 | GE27 | 0 | Enabled | Disabled | Disabled |
| <input type="checkbox"/> | 28 | GE28 | 0 | Enabled | Disabled | Disabled |
| <input type="checkbox"/> | 29 | LAG1 | 0 | Enabled | Disabled | Disabled |
| <input type="checkbox"/> | 30 | LAG2 | 0 | Enabled | Disabled | Disabled |
| <input type="checkbox"/> | 31 | LAG3 | 0 | Enabled | Disabled | Disabled |
| <input type="checkbox"/> | 32 | LAG4 | 0 | Enabled | Disabled | Disabled |
| <input type="checkbox"/> | 33 | LAG5 | 0 | Enabled | Disabled | Disabled |
| <input type="checkbox"/> | 34 | LAG6 | 0 | Enabled | Disabled | Disabled |
| <input type="checkbox"/> | 35 | LAG7 | 0 | Enabled | Disabled | Disabled |
| <input type="checkbox"/> | 36 | LAG8 | 0 | Enabled | Disabled | Disabled |

Figure 126 - QoS > General > Property

| Item | Description |
|-------|--|
| State | Set checkbox to enable/disable QoS. |
| Trust | Select QoS trust mode <ul style="list-style-type: none"> ● CoS: Traffic is mapped to queues based on the CoS field in the VLAN tag, or based on the per-port default CoS value (if there is no VLAN tag on the incoming packet), the actual mapping of the CoS to queue can be configured on port setting dialog. ● IP Precedence: Traffic is mapped to queues based on the IP precedence. The actual mapping of the IP precedence to queue can be configured on the IP Precedence mapping page. |

| Port Setting Table | |
|---------------------------|---|
| Port | Port name |
| CoS | Port default CoS priority value for the selected ports. |
| Trust | Port trust state <ul style="list-style-type: none"> ● Enabled: Traffic will follow trust mode in global setting ● Disabled: Traffic will always use best efforts |
| Remarking (CoS) | Set checkbox to enable/disable port CoS remarking. <ul style="list-style-type: none"> ● Enabled: CoS remarking is enabled ● Disabled: CoS remarking is disabled |
| Remarking (IP Precedence) | Set checkbox to enable/disable port IP Precedence remarking. <ul style="list-style-type: none"> ● Enabled: DSCP remarking is enabled ● Disabled: DSCP remarking is disabled |

Click "**Edit**" button to view the Edit Port Setting menu.

Figure 127 - Qos > General > Property

| Item | Description |
|---------------------------|---|
| Port | Selected port list. |
| CoS | Set default CoS/802.1p priority value for the selected ports. |
| Trust | Set checkbox to enable/disable port trust state. |
| Remarking (CoS) | Set checkbox to enable/disable port CoS remarking. |
| Remarking (IP Precedence) | Set checkbox to enable/disable port IP Precedence remarking. |

IV-11-1-2 Queue Scheduling

The switch supports eight queues for each interface. Queue number 8 is the highest priority queue.

Queue number 1 is the lowest priority queue. There are two ways of determining how traffic in queues is handled, Strict Priority (SP) and Weighted Round Robin (WRR).

- **Strict Priority (SP)**—Egress traffic from the highest priority queue is transmitted first. Traffic from the lower queues is processed only after the highest queue has been transmitted, which provide the highest level of priority of traffic to the highest numbered queue.
- **Weighted Round Robin (WRR)**—In WRR mode the number of packets sent from the queue is proportional to the weight of the queue (the higher the weight, the more frames are sent).

The queuing modes can be selected on the Queue page. When the queuing mode is by Strict Priority, the priority sets the order in which queues are serviced, starting with queue_8 (the highest priority queue) and going to the next lower queue when each queue is completed.

When the queuing mode is Weighted Round Robin, queues are serviced until their quota has been used up and then another queue is serviced. It is also possible to assign some of the lower queues to WRR, while keeping some of the higher queues in Strict Priority. In this case traffic for the SP queues is always sent before traffic from the WRR queues. After the SP queues have been emptied, traffic from the WRR queues is forwarded. (The relative portion from each WRR queue depends on its weight).

To display Queue Scheduling web page, click **QoS > General > Queue Scheduling**

| Queue | Method | | | WRR Bandwidth (%) |
|-------|----------------------------------|-----------------------|--------|-------------------|
| | Strict Priority | WRR | Weight | |
| 1 | <input checked="" type="radio"/> | <input type="radio"/> | 1 | |
| 2 | <input checked="" type="radio"/> | <input type="radio"/> | 2 | |
| 3 | <input checked="" type="radio"/> | <input type="radio"/> | 3 | |
| 4 | <input checked="" type="radio"/> | <input type="radio"/> | 4 | |
| 5 | <input checked="" type="radio"/> | <input type="radio"/> | 5 | |
| 6 | <input checked="" type="radio"/> | <input type="radio"/> | 9 | |
| 7 | <input checked="" type="radio"/> | <input type="radio"/> | 13 | |
| 8 | <input checked="" type="radio"/> | <input type="radio"/> | 15 | |

Apply

Figure 128 - QoS > General > Queue Scheduling

| Item | Description |
|-----------------|---|
| Queue | Queue ID to configure. |
| Strict Priority | Set queue to strict priority type. |
| WRR | Set queue to Weight round robin type. |
| Weight | If the queue type is WRR, set the queue weight for the queue. |
| WRR Bandwidth | Percentage of WRR queue bandwidth. |

IV-11-1-3 CoS Mapping

The CoS to Queue table determines the egress queues of the incoming packets based on the 802.1p priority in their VLAN tags. For incoming untagged packets, the 802.1p priority will be the default CoS/802.1p priority assigned to the ingress ports. Use the Queues to CoS table to remark the CoS/802.1p priority for egress traffic from each queue.

To display CoS Mapping web page, click **QoS > General > CoS Mapping**.

CoS to Queue Mapping

| CoS | Queue |
|-----|-------|
| 0 | 2 ▼ |
| 1 | 1 ▼ |
| 2 | 3 ▼ |
| 3 | 4 ▼ |
| 4 | 5 ▼ |
| 5 | 6 ▼ |
| 6 | 7 ▼ |
| 7 | 8 ▼ |

Queue to CoS Mapping

| Queue | CoS |
|-------|-----|
| 1 | 1 ▼ |
| 2 | 0 ▼ |
| 3 | 2 ▼ |
| 4 | 3 ▼ |
| 5 | 4 ▼ |
| 6 | 5 ▼ |
| 7 | 6 ▼ |
| 8 | 7 ▼ |

Figure 129 - QoS > General > Cos Mapping

| Item | Description |
|----------------------|------------------------------------|
| CoS to Queue Mapping | |
| CoS | CoS value. |
| Queue | Select queue id for the CoS value. |
| Queue to CoS Mapping | |
| Queue | Queue ID |
| CoS | Select CoS value for the queue id. |

IV-11-1-4 IP Precedence Mapping

This page allows user to configure IP Precedence to Queue mapping and Queue to IP Precedence mapping.

To display IP Precedence Mapping web page, click **QoS > General > IP Precedence Mapping**.

IP Precedence to Queue Mapping

| IP Precedence | Queue |
|---------------|-------|
| 0 | 1 ▼ |
| 1 | 2 ▼ |
| 2 | 3 ▼ |
| 3 | 4 ▼ |
| 4 | 5 ▼ |
| 5 | 6 ▼ |
| 6 | 7 ▼ |
| 7 | 8 ▼ |

Queue to IP Precedence Mapping

| Queue | IP Precedence |
|-------|---------------|
| 1 | 0 ▼ |
| 2 | 1 ▼ |
| 3 | 2 ▼ |
| 4 | 3 ▼ |
| 5 | 4 ▼ |
| 6 | 5 ▼ |
| 7 | 6 ▼ |
| 8 | 7 ▼ |

Figure 130 - QoS > General > IP Precedence Mapping

| Item | Description |
|--------------------------------|--|
| IP Precedence to Queue Mapping | |
| IP Precedence | IP Precedence value. |
| Queue | Queue value which IP Precedence is mapped. |
| Queue to IP Precedence Mapping | |
| Queue | Queue ID. |
| IP Precedence | IP Precedence value which queue is mapped. |

IV-11-2 Rate Limit

Use the Rate Limit pages to define values that determine how much traffic the switch can receive and send on specific port or queue.

IV-11-2-1 Ingress/Egress Port

This page allows user to configure ingress port rate limit and egress port rate limit. The ingress rate limit is the number of bits per second that can be received from the ingress interface. Excess bandwidth above this limit is discarded.

To display Ingress / Egress Port web page, click **QoS > Rate Limit > Ingress / Egress Port**.

| Ingress / Egress Port Table | | | | | | |
|-----------------------------|------|---------|-------------|--------|-------------|--|
| Entry | Port | Ingress | | Egress | | |
| | | State | Rate (Kbps) | State | Rate (Kbps) | |
| <input type="checkbox"/> | 1 | GE1 | Disabled | | Disabled | |
| <input type="checkbox"/> | 2 | GE2 | Disabled | | Disabled | |
| <input type="checkbox"/> | 3 | GE3 | Disabled | | Disabled | |
| <input type="checkbox"/> | 4 | GE4 | Disabled | | Disabled | |
| <input type="checkbox"/> | 5 | GE5 | Disabled | | Disabled | |
| <input type="checkbox"/> | 6 | GE6 | Disabled | | Disabled | |
| <input type="checkbox"/> | 7 | GE7 | Disabled | | Disabled | |
| <input type="checkbox"/> | 8 | GE8 | Disabled | | Disabled | |
| <input type="checkbox"/> | 9 | GE9 | Disabled | | Disabled | |
| <input type="checkbox"/> | 10 | GE10 | Disabled | | Disabled | |
| <input type="checkbox"/> | 11 | GE11 | Disabled | | Disabled | |
| <input type="checkbox"/> | 12 | GE12 | Disabled | | Disabled | |
| <input type="checkbox"/> | 13 | GE13 | Disabled | | Disabled | |
| <input type="checkbox"/> | 14 | GE14 | Disabled | | Disabled | |
| <input type="checkbox"/> | 15 | GE15 | Disabled | | Disabled | |
| <input type="checkbox"/> | 16 | GE16 | Disabled | | Disabled | |
| <input type="checkbox"/> | 17 | GE17 | Disabled | | Disabled | |
| <input type="checkbox"/> | 18 | GE18 | Disabled | | Disabled | |
| <input type="checkbox"/> | 19 | GE19 | Disabled | | Disabled | |
| <input type="checkbox"/> | 20 | GE20 | Disabled | | Disabled | |
| <input type="checkbox"/> | 21 | GE21 | Disabled | | Disabled | |
| <input type="checkbox"/> | 22 | GE22 | Disabled | | Disabled | |
| <input type="checkbox"/> | 23 | GE23 | Disabled | | Disabled | |
| <input type="checkbox"/> | 24 | GE24 | Disabled | | Disabled | |
| <input type="checkbox"/> | 25 | GE25 | Disabled | | Disabled | |
| <input type="checkbox"/> | 26 | GE26 | Disabled | | Disabled | |
| <input type="checkbox"/> | 27 | GE27 | Disabled | | Disabled | |
| <input type="checkbox"/> | 28 | GE28 | Disabled | | Disabled | |

Q

Figure 131 - QoS > Rate Limit > Ingress / Egress Port

| Item | Description |
|-----------------|---|
| Port | Port name. |
| Ingress (State) | Port ingress rate limit state <ul style="list-style-type: none"> ● Enabled: Ingress rate limit is enabled ● Disabled: Ingress rate limit is disabled |
| Ingress (Rate) | Port ingress rate limit value if ingress rate state is enabled. |
| IP Precedence | IP Precedence value which queue is mapped. |
| Egress (State) | Port egress rate limit state |

| | |
|---------------|--|
| | <ul style="list-style-type: none"> ● Enabled: Egress rate limit is enabled ● Disabled: Egress rate limit is disabled |
| Egress (Rate) | Port egress rate limit value if egress rate state is enabled. |

Click "Edit" button to view the Ingress / Egress Port menu.

Edit Ingress / Egress Port

| | |
|----------------|---|
| Port | GE1 |
| Ingress | <input type="checkbox"/> Enable <input style="width: 150px;" type="text" value="1000000"/> Kbps (16 - 1000000) |
| Egress | <input type="checkbox"/> Enable <input style="width: 150px;" type="text" value="1000000"/> Kbps (16 - 1000000) |

Figure 132 - QoS > Rate Limit > Ingress / Egress Port

| Item | Description |
|---------|--|
| Port | Select port list. |
| Ingress | Set checkbox to enable/disable ingress rate limit. If ingress rate limit is enabled, rate limit value need to be assigned. |
| Egress | Set checkbox to enable/disable egress rate limit. If egress rate limit is enabled, rate limit value need to be assigned. |

IV-12 Diagnostics

Use the Diagnostics pages to configure settings for the switch diagnostics feature or operating diagnostic utilities.

IV-12-1 Logging

IV-12-1-1 Property

To enable/disable the logging service, click **Diagnostic > Logging > Property**.

The screenshot displays the configuration interface for logging services. It is organized into four main sections, each with a title bar and two sub-sections: 'State' and 'Minimum Severity'.
 1. **Global Logging:** The 'State' checkbox is checked, indicating the logging service is enabled.
 2. **Console Logging:** The 'State' checkbox is checked. The 'Minimum Severity' dropdown is set to 'Notice'. A note below indicates the severity levels: Emergency, Alert, Critical, Error, Warning, Notice.
 3. **RAM Logging:** The 'State' checkbox is checked. The 'Minimum Severity' dropdown is set to 'Notice'. A note below indicates the severity levels: Emergency, Alert, Critical, Error, Warning, Notice.
 4. **Flash Logging:** The 'State' checkbox is unchecked, indicating the logging service is disabled. The 'Minimum Severity' dropdown is set to 'Notice'. A note below indicates the severity levels: Emergency, Alert, Critical, Error, Warning, Notice.
 At the bottom of the configuration area is an 'Apply' button.

Figure 133 - Diagnostics > Logging > Property

| Item | Description |
|------------------|---|
| State | Enable/Disable the global logging services. When the logging service is enabled, logging configuration of each destination rule can be individually configured. If the logging service is disabled, no messages will be sent to these destinations. |
| Console Logging | |
| State | Enable/Disable the console logging service |
| Minimum Severity | The minimum severity for the console logging. |
| RAM Logging | |
| State | Enable/Disable the RAM logging service. |
| Minimum Severity | The minimum severity for the RAM logging. |
| Flash Logging | |

| | |
|------------------|--|
| State | Enable/Disable the flash logging service. |
| Minimum Severity | The minimum severity for the flash loggin. |

IV-12-1-2 Remote Server

To configure the remote logging server, click **Diagnostic > Logging > Remote Server**.

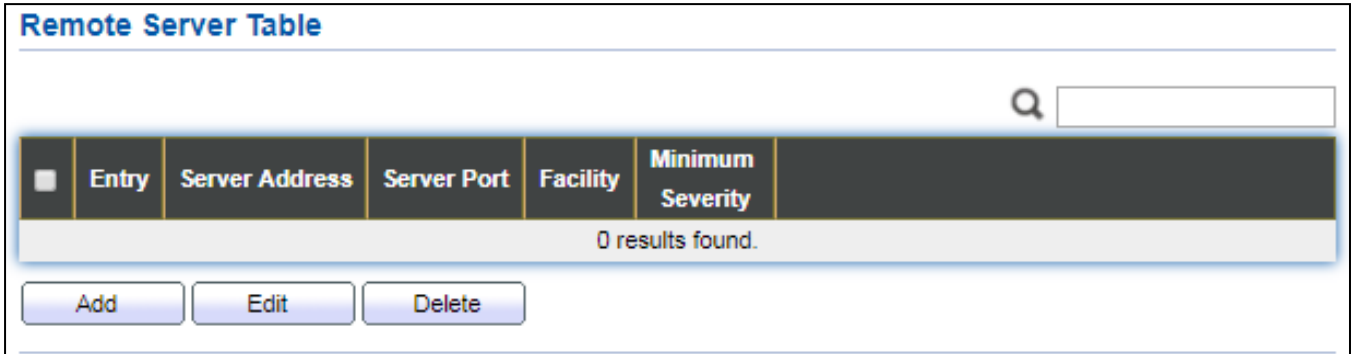


Figure 134 - Diagnostics > Logging > Remote Server

| Item | Description |
|------------------|--|
| Server Address | The IP address of the remote logging server. |
| Server Ports | The port number of the remote logging server. |
| Facility | The facility of the logging messages. It can be one of the following values: local0, local1, local2, local3, local4, local5, local6, and local7. |
| Minimum Severity | <ul style="list-style-type: none"> ● Emergence: System is not usable. ● Alert: Immediate action is needed. ● Critical: System is in the critical condition. ● Error: System is in error condition ● Warning: System warning has occurred ● Notice: System is functioning properly, but a system notice has occurred. ● Informational: Device information. ● Debug: Provides detailed information about an event. |

IV-12-2 Mirroring

To display Port Mirroring web page, click **Diagnostics > Mirroring**.

Mirroring Table

| | Session ID | State | Monitor Port | Ingress Port | Egress Port |
|-----------------------|------------|----------|--------------|--------------|-------------|
| <input type="radio"/> | 1 | Disabled | --- | --- | --- |
| <input type="radio"/> | 2 | Disabled | --- | --- | --- |
| <input type="radio"/> | 3 | Disabled | --- | --- | --- |
| <input type="radio"/> | 4 | Disabled | --- | --- | --- |

*** Allow the monitor port to send or receive normal packets

Figure 135 - Diagnostics > Mirroring

| Item | Description |
|--------------|--|
| Session ID | Select mirror session ID. |
| State | Select mirror session state : port-base mirror or disable <ul style="list-style-type: none"> ● Enabled: Enable port based mirror ● Disabled: Disable mirror. |
| Monitor Port | Select mirror session monitor port, and select whether normal packet could be sent or received by monitor port. |
| Ingress port | Select mirror session source rx ports. |
| Egress port | Select mirror session source tx ports. |

Click "Edit" button to view the Edit Mirroring menu.

Figure 136 - Diagnostics > Mirroring > Edit Mirroring

| Item | Description |
|--------------|--|
| Session ID | Selected mirror session ID. |
| State | Select mirror session state : port-base mirror or disable <ul style="list-style-type: none"> ● Enabled: Enable port based mirror ● Disabled: Disable mirror. |
| Monitor Port | Select mirror session monitor port, and select whether normal packet could be sent or received by monitor port. |
| Ingress port | Select mirror session source rx ports. |
| Egress port | Select mirror session source tx ports. |

IV-12-3 Ping

For the ping functionality, click **Diagnostic > Ping**.

The screenshot shows the 'Ping' diagnostic tool interface. It is divided into a configuration area and a results area.

Configuration Area:

- Address Type:** Radio buttons for Hostname (selected), IPv4, and IPv6.
- Server Address:** An empty text input field.
- Count:** A text input field containing '4', with a range indicator 'Sec (1 - 65535)'.
- User Defined:** An unchecked checkbox.

Buttons: 'Ping' and 'Stop' buttons are located below the configuration area.

Ping Result Section:

Packet Status Table:

| Packet Status | |
|-----------------|-----|
| Status | N/A |
| Transmit Packet | 0 |
| Receive Packet | 0 |
| Packet Lost | 0% |

Round Trip Time Table:

| Round Trip Time | |
|-----------------|--------|
| Min | 0.0 ms |
| Max | 0.0 ms |
| Average | 0.0 ms |

Figure 137 - Diagnostics > Ping

| Item | Description |
|----------------|--|
| Address Type | Specify the address type to "Hostname" or "IPv4". |
| Server Address | Specify the Hostname/IPv4 address for the remote logging server. |
| Count | Specify the numbers of each ICMP ping request. |

IV-12-4 Traceroute

For trace route functionality, click **Diagnostic > Traceroute**.

The screenshot shows a configuration panel for a traceroute tool. It includes three main input sections: 'Address Type' with radio buttons for 'Hostname' (selected) and 'IPv4'; 'Server Address' with an empty text box; and 'Time to Live' with a checkbox for 'User Defined' (unchecked) and a numeric input field set to '30' with a range '(2 - 255, default 30)'. Below these are 'Apply' and 'Stop' buttons. A section titled 'Traceroute Result' contains a large empty rectangular area for displaying the results.

Figure 138 - Diagnostics > Traceroute

| Item | Description |
|----------------|--|
| Address Type | Specify the address type to “Hostname” or “IPv4”. |
| Server Address | Specify the Hostname/IPv4 address for the remote logging server. |
| Time to Live | Specify the max hops of hosts for traceroute. |

IV-12-5 Copper Test

For copper length diagnostic, click **Diagnostic > Copper Test**.

The screenshot shows a web interface for a Copper Test. At the top, there is a 'Port' dropdown menu with 'GE1' selected. Below this is a 'Copper Test' button. The main content area is titled 'Copper Test Result' and contains a table with the following data:

| Cable Status | |
|--------------|-----|
| Port | N/A |
| Result | N/A |
| Length | N/A |

Figure 139 - Diagnostics > Logging>Copper Test

| Item | Description |
|--------------------|--|
| Port | Specify the interface for the copper test. |
| Copper Test Result | |
| Port | The interface for the copper test. |
| Result | The status of copper test. It include: <ul style="list-style-type: none"> ● OK: Correctly terminated pair. ● Short Cable: Shorted pair. ● Open Cable: Open pair, no link partner. ● Impedance Mismatch: Terminating impedance is not in the reference range. |
| Length | Distance in meter from the port to the location on the cable where the fault was discovered. |

IV-12-6 Fiber Module

The Optical Module Status page displays the operational information reported by the Small Form-factor Pluggable (SFP) transceiver. Some information may not be available for SFPs without the supports of digital diagnostic monitoring standard SFF-8472.

To display the Optical Module Diagnostic page, click **Diagnostic > Fiber Module**.

| Fiber Module Table | | | | | | | | |
|-----------------------|------|-----------------|-------------|--------------|-------------------|------------------|------------|----------------|
| | Port | Temperature (C) | Voltage (V) | Current (mA) | Output Power (mW) | Input Power (mW) | OE Present | Loss of Signal |
| <input type="radio"/> | GE25 | N/A | N/A | N/A | N/A | N/A | Remove | Loss |
| <input type="radio"/> | GE26 | N/A | N/A | N/A | N/A | N/A | Remove | Loss |
| <input type="radio"/> | GE27 | N/A | N/A | N/A | N/A | N/A | Remove | Loss |
| <input type="radio"/> | GE28 | N/A | N/A | N/A | N/A | N/A | Remove | Loss |

Refresh Detail

Figure 140 - Diagnostics > Logging>Fiber Module

| Item | Description |
|-------------------|---|
| Port | Interface or port number. |
| Temperature | Internally measured transceiver temperature. |
| Voltage | Internally measured supply voltage. |
| Current | Measured TX bias current. |
| Output Power | Measured TX output power in milliwatts. |
| Input Power | Measured RX received power in milliwatts. |
| Transmitter Fault | State of TX fault. |
| OE Present | Indicate transceiver has achieved power up and data is ready. |
| Loss of Signal | Loss of signal. |
| Refresh | Refresh the page. |
| Detail | The detail information on the specified port. |

Click "**Detail**" button to view the Fiber Module Status menu

Fiber Module Status

| | |
|--------------------------|------|
| Port | GE25 |
| OE Present | N/A |
| Loss of Signal | N/A |
| Transceiver Type | N/A |
| Connector Type | N/A |
| Ethernet Compliance Code | N/A |
| Transmission Media | N/A |
| Wavelength | N/A |
| Bitrate | N/A |
| Vendor OUI | N/A |
| Vendor Name | N/A |
| Vendor PN | N/A |
| Vendor Revision | N/A |
| Vendor SN | N/A |
| Date Code | N/A |
| Temperature (C) | N/A |
| Voltage (V) | N/A |
| Current (mA) | N/A |
| Output Power (mW) | N/A |
| Input Power (mW) | N/A |

Figure 141 - Diagnostics > Logging>Fiber Module>Fiber Module Status

IV-12-7 UDLD

Use the UDLD pages to configure settings of UDLD function.

IV-12-7-1 Property

This page allows user to configure global and per interface settings of UDLD.

To display Property page, click **Diagnostics > UDLD > Property**.

Message Time Sec (1 - 90, default 15)

Port Setting Table

| <input type="checkbox"/> | Entry | Port | Mode | Bidirectional State | Operational Status | Neighbor |
|--------------------------|-------|------|----------|---------------------|--------------------|----------|
| <input type="checkbox"/> | 1 | GE1 | Disabled | Unknown | | 0 |
| <input type="checkbox"/> | 2 | GE2 | Disabled | Unknown | | 0 |
| <input type="checkbox"/> | 3 | GE3 | Disabled | Unknown | | 0 |
| <input type="checkbox"/> | 4 | GE4 | Disabled | Unknown | | 0 |
| <input type="checkbox"/> | 5 | GE5 | Disabled | Unknown | | 0 |
| <input type="checkbox"/> | 6 | GE6 | Disabled | Unknown | | 0 |
| <input type="checkbox"/> | 7 | GE7 | Disabled | Unknown | | 0 |
| <input type="checkbox"/> | 8 | GE8 | Disabled | Unknown | | 0 |
| <input type="checkbox"/> | 9 | GE9 | Disabled | Unknown | | 0 |
| <input type="checkbox"/> | 10 | GE10 | Disabled | Unknown | | 0 |
| <input type="checkbox"/> | 11 | GE11 | Disabled | Unknown | | 0 |
| <input type="checkbox"/> | 12 | GE12 | Disabled | Unknown | | 0 |
| <input type="checkbox"/> | 13 | GE13 | Disabled | Unknown | | 0 |
| <input type="checkbox"/> | 14 | GE14 | Disabled | Unknown | | 0 |
| <input type="checkbox"/> | 15 | GE15 | Disabled | Unknown | | 0 |
| <input type="checkbox"/> | 16 | GE16 | Disabled | Unknown | | 0 |
| <input type="checkbox"/> | 17 | GE17 | Disabled | Unknown | | 0 |
| <input type="checkbox"/> | 18 | GE18 | Disabled | Unknown | | 0 |
| <input type="checkbox"/> | 19 | GE19 | Disabled | Unknown | | 0 |
| <input type="checkbox"/> | 20 | GE20 | Disabled | Unknown | | 0 |
| <input type="checkbox"/> | 21 | GE21 | Disabled | Unknown | | 0 |
| <input type="checkbox"/> | 22 | GE22 | Disabled | Unknown | | 0 |
| <input type="checkbox"/> | 23 | GE23 | Disabled | Unknown | | 0 |
| <input type="checkbox"/> | 24 | GE24 | Disabled | Unknown | | 0 |
| <input type="checkbox"/> | 25 | GE25 | Disabled | Unknown | | 0 |
| <input type="checkbox"/> | 26 | GE26 | Disabled | Unknown | | 0 |
| <input type="checkbox"/> | 27 | GE27 | Disabled | Unknown | | 0 |
| <input type="checkbox"/> | 28 | GE28 | Disabled | Unknown | | 0 |

Figure 142 - Diagnostics > UDLD >Property

| Item | Description |
|---------------------|---|
| Message Time | Input the interval for sending message. Range is 1 -90 seconds. |
| Port | Display port ID of entry. |
| Mode | Display UDLD running mode of interface. |
| Bidirectional State | Display bidirectional state of interface. |
| Operational Status | Display operational status of interface. |
| Neighbor | Display the number of neighbor of interface. |

Click "**Edit**" button to view the Fiber Module Status menu

Edit Port Setting

Port: GE1

Mode: Disabled, Normal, Aggressive

Apply Close

Figure 143 - Diagnostics > UDLD>Property>Edit

| Item | Description |
|------|--|
| Port | Display selected port to be edited. |
| Mode | Select UDLD running mode of interface. <ul style="list-style-type: none"> ● Disabled: Disable UDLD function. ● Normal: Running on normal mode that port goes to Link Up One phase after last neighbor ages out. ● Aggressive: Running on aggressive mode that port goes to Re-Establish phase after last neighbor ages out. |

IV-12-7-2 Neighbor

To display Neighbor page, click **Diagnostics > UDLD > Neighbor**

Neighbor Table

Search: []

| Entry | Expiration Time | Current Neighbor State | Device ID | Device Name | Port ID | Message Interval | Timeout Interval |
|------------------|-----------------|------------------------|-----------|-------------|---------|------------------|------------------|
| 0 results found. | | | | | | | |

Refresh

Figure 144 - Diagnostics > UDLD>Neighbor

| Item | Description |
|------------------------|--|
| Entry | Display entry index. |
| Expiration Time | Display expiration time before age out. |
| Current Neighbor State | Display neighbor current state. |
| Device ID | Display neighbor device ID. |
| Device Name | Display neighbor device name. |
| Port ID | Display neighbor port ID that connected. |
| Message Interval | Display neighbor message interval. |
| Timeout Interval | Display neighbor timeout interval. |

IV-13 Management

Use the Management pages to configure settings for the switch management features.

IV-13-1 User Account

The default username/password is admin/1234. Default account is unable to be deleted. Use this page to add additional users that are permitted to manage the switch or to change the passwords of existing users.

To display User Account web page, click **Management > User Account**.

The screenshot shows the 'User Account' management interface. At the top, it says 'Showing All entries' and 'Showing 1 to 1 of 1 entries'. Below this is a table with columns for 'Username' and 'Privilege'. The table contains one row with 'admin' and 'Admin'. Below the table are buttons for 'Add', 'Edit', and 'Delete'. On the right side, there are navigation buttons: 'First', 'Previous', '1', 'Next', and 'Last'. A search bar is located on the right side of the table.

Figure 145 - Management > User Account

| Item | Description |
|-----------|--|
| Username | User name of the account. |
| Privilege | Select privilege level for new account. <ul style="list-style-type: none">● Admin: Allow to change switch settings. Privilege value equals to 15.● User: See switch settings only. Not allow to change it. Privilege level equals to 1. |

Click "Add" or "Edit" button to view the Add/Edit User Account menu.

The screenshot shows the 'Add User Account' dialog box. It has a title bar 'Add User Account'. Below the title bar, there are four input fields: 'Username', 'Password', 'Confirm Password', and 'Privilege'. The 'Privilege' field has two radio buttons: 'Admin' (selected) and 'User'. At the bottom of the dialog box, there are two buttons: 'Apply' and 'Close'.

Edit User Account

| | |
|------------------|--|
| Username | admin |
| Password | <input type="text"/> |
| Confirm Password | <input type="text"/> |
| Privilege | <input checked="" type="radio"/> Admin <input type="radio"/> User |

Apply Close

Figure 146 - Management > User Account > Add/Edit User Account

| Item | Description |
|------------------|---|
| Username | User name of the account. |
| Password | Set password of the account. |
| Confirm Password | Set the same password of the account as in "Password" field. |
| Privilege | Select privilege level for new account. <ul style="list-style-type: none"> ● Admin: Allow to change switch settings. Privilege value equals to 15. ● User: See switch settings only. Not allow to change it. Privilege level equals to 1. |

IV-13-2 Fireware

IV-13-2-1 Upgrade / Backup

This page allows user to upgrade or backup firmware image through HTTP or TFTP server.

For **Upgrade** action and **HTTP** method:

The screenshot shows a configuration panel for upgrading firmware via HTTP. It features three sections: 'Action' with radio buttons for 'Upgrade' (selected) and 'Backup'; 'Method' with radio buttons for 'TFTP' and 'HTTP' (selected); and 'Filename' with a 'Choose File' button and a text field containing 'No file chosen'. An 'Apply' button is located at the bottom left.

Figure 147 - Management > Firmware > Upgrade (Default Method: HTTP)

| Item | Description |
|----------|---|
| Action | Firmware operations <ul style="list-style-type: none"> ● Upgrade: Upgrade firmware from remote host to DUT. ● Backup: Backup firmware image from DUT to remote host. |
| Method | Firmware upgrade / backup method. <ul style="list-style-type: none"> ● TFTP: Using TFTP to upgrade/backup firmware. ● HTTP: Using WEB browser to upgrade/backup firmware. |
| Filename | Use browser to upgrade firmware, you should select firmware image file on your host PC. |

For **Upgrade** action and **TFTP** method:

The screenshot shows a configuration panel for upgrading firmware via TFTP. It features five sections: 'Action' with radio buttons for 'Upgrade' (selected) and 'Backup'; 'Method' with radio buttons for 'TFTP' (selected) and 'HTTP'; 'Address Type' with radio buttons for 'Hostname' (selected), 'IPv4', and 'IPv6'; 'Server Address' with an empty text input field; and 'Filename' with an empty text input field. An 'Apply' button is located at the bottom left.

Figure 148 - Management > Firmware > Upgrade (Method: TFTP)

| Item | Description |
|----------------|--|
| Action | Firmware operations <ul style="list-style-type: none"> ● Upgrade: Upgrade firmware from remote host to DUT ● Backup: Backup firmware image from DUT to remote host |
| Method | Firmware upgrade / backup method <ul style="list-style-type: none"> ● TFTP: Using TFTP to upgrade/backup firmware. ● HTTP: Using WEB browser to upgrade/backup firmware. |
| Address Type | Specify TFTP server address type <ul style="list-style-type: none"> ● Hostname: Use domain name as server address ● IPv4: Use IPv4 as server address ● IPv6: Use IPv6 as server address |
| Server Address | Specify TFTP server address. |
| Filename | Firmware image file name on remote TFTP server |

For **Backup** action and **HTTP** method:

The screenshot shows a configuration panel with three sections: Action, Method, and Firmware. Each section has radio buttons for different options. In the Action section, 'Backup' is selected. In the Method section, 'HTTP' is selected. In the Firmware section, 'Image0' is selected. An 'Apply' button is located at the bottom left of the panel.

Figure 149 - Management > Firmware > Backup (Method: HTTP)

| Item | Description |
|----------|--|
| Action | Firmware operations <ul style="list-style-type: none"> ● Upgrade: Upgrade firmware from remote host to DUT ● Backup: Backup firmware image from DUT to remote host |
| Method | Firmware upgrade / backup method <ul style="list-style-type: none"> ● TFTP: Using TFTP to upgrade/backup firmware. ● HTTP: Using WEB browser to upgrade/backup firmware. |
| Firmware | Firmware partition need to backup <ul style="list-style-type: none"> ● Image0: Firmware image in flash partition 0 ● Image1: Firmware image in flash partition 1 |

For **Backup** action and **TFTP** method:

The screenshot shows a configuration interface for a backup action. The 'Action' section has 'Backup' selected. The 'Method' section has 'TFTP' selected. The 'Firmware' section has 'Image0' selected. The 'Address Type' section has 'Hostname' selected. There are two empty text input fields for 'Server Address' and 'Filename'. An 'Apply' button is at the bottom left.

Figure 150 - Management > Firmware > Backup (Method: TFTP)

| Item | Description |
|----------------|---|
| Action | Firmware operations <ul style="list-style-type: none"> ● Upgrade: Upgrade firmware from remote host to DUT ● Backup: Backup firmware image from DUT to remote host |
| Method | Firmware upgrade / backup method <ul style="list-style-type: none"> ● TFTP: Using TFTP to upgrade/backup firmware. ● HTTP: Using WEB browser to upgrade/backup firmware. |
| Firmware | Firmware partition need to backup <ul style="list-style-type: none"> ● Image0: Firmware image in flash partition 0. ● Image1: Firmware image in flash partition 1. |
| Address Type | Specify TFTP server address type <ul style="list-style-type: none"> ● Hostname: Use domain name as server address. ● IPv4: Use IPv4 as server address. ● IPv6: Use IPv6 as server address. |
| Server Address | Specify TFTP server address address. |
| Filename | File name saved on remote TFTP server. |

IV-13-2-2 Active Image

This page allows user to select firmware image on next booting and show firmware information on both flash partitions.

To display the Active Image web page, click **Management > Firmware > Active Image**.

The screenshot shows a web interface for selecting a firmware image. At the top, there is a section titled "Active Image" with two radio buttons: "Image0" (unselected) and "Image1" (selected). Below this, a note states: "Note: the image was selected for the next boot".

Below the selection area, there are two detailed sections:

- Active Image:**
 - Firmware: Image1
 - Version: 1.1.1
 - Name: Edimax_GS-5424G_V1.1.1_r451_vmlinux_web.bix
 - Size: 6377396 Bytes
 - Created: 2018-01-04 19:32:12
- Backup Image:**
 - Firmware: Image0
 - Version: 1.00.08
 - Name: (empty)
 - Size: 6377963 Bytes
 - Created: 2017-12-04 04:32:24

At the bottom of the form, there is an "Apply" button.

Figure 151 - Management > Firmware > Active Image

| Item | Description |
|--------------|--|
| Active Image | Select firmware image to use on next booting |
| Firmware | Firmware flash partition name. |
| Version | Firmware version. |
| Name | Firmware name. |
| Size | Firmware image size. |
| Created | Firmware image created date. |

IV-13-3 Configuration

IV-13-3-1 Upgrade / Backup

This page allows user to upgrade or backup configuration file through HTTP or TFTP server.

For **Upgrade** action and **HTTP** method:

The screenshot shows a web interface for configuration management. It is divided into four sections by dashed lines:

- Action:** Radio buttons for 'Upgrade' (selected) and 'Backup'.
- Method:** Radio buttons for 'TFTP' and 'HTTP' (selected).
- Configuration:** Radio buttons for 'Running Configuration' (selected), 'Startup Configuration', 'Backup Configuration', 'RAM Log', and 'Flash Log'.
- Filename:** A 'Choose File' button and a text box containing 'No file chosen'.

An 'Apply' button is located at the bottom left of the form.

Figure 152 - Management > Configuration > Upgrade (Default Method: HTTP)

| Item | Description |
|---------------|--|
| Action | Configuration operations <ul style="list-style-type: none">● Upgrade: Upgrade firmware from remote host to DUT● Backup: Backup firmware image from DUT to remote host |
| Method | Configuration upgrade / backup method <ul style="list-style-type: none">● TFTP: Using TFTP to upgrade/backup firmware● HTTP: Using WEB browser to upgrade/backup firmware |
| Configuration | Configuration types <ul style="list-style-type: none">● Running Configuration: Merge to current running configuration file● Startup Configuration: Replace startup configuration file● Backup Configuration: Replace backup configuration file |
| Filename | Use browser to upgrade configuration, you should select configuration file on your host PC. |

For **Upgrade** action and **TFTP** method:

The screenshot shows a configuration window for the 'Upgrade' action using the 'TFTP' method. The 'Action' section has 'Upgrade' selected. The 'Method' section has 'TFTP' selected. The 'Configuration' section has 'Running Configuration' selected. The 'Address Type' section has 'Hostname' selected. There are two empty text input fields for 'Server Address' and 'Filename'. An 'Apply' button is located at the bottom left of the window.

Figure 153 - Management > Configuration > Upgrade (Method: TFTP)

| Item | Description |
|----------------|--|
| Action | Configuration operations <ul style="list-style-type: none"> ● Upgrade: Upgrade firmware from remote host to DUT ● Backup: Backup firmware image from DUT to remote host |
| Method | Configuration upgrade / backup method <ul style="list-style-type: none"> ● TFTP: Using TFTP to upgrade/backup firmware ● HTTP: Using WEB browser to upgrade/backup firmware |
| Configuration | Configuration types <ul style="list-style-type: none"> ● Running Configuration: Merge to current running configuration file ● Startup Configuration: Replace startup configuration file ● Backup Configuration: Replace backup configuration file |
| Address Type | Specify TFTP server address type <ul style="list-style-type: none"> ● Hostname: Use domain name as server address ● IPv4: Use IPv4 as server address ● IPv6: Use IPv6 as server address |
| Server Address | Specify TFTP server address address |
| Filename | File name saved on remote TFTP server |

For **Backup** action and **HTTP** method:

The screenshot shows a configuration window with a yellow background. It is divided into three sections by dashed lines:

- Action:** Contains two radio buttons: 'Upgrade' (unselected) and 'Backup' (selected).
- Method:** Contains two radio buttons: 'TFTP' (unselected) and 'HTTP' (selected).
- Configuration:** Contains five radio buttons: 'Running Configuration' (selected), 'Startup Configuration' (unselected), 'Backup Configuration' (unselected), 'RAM Log' (unselected), and 'Flash Log' (unselected).

At the bottom left of the window is an 'Apply' button.

Figure 154 - Management > Configuration > Backup (Method: HTTP)

| Item | Description |
|---------------|---|
| Action | Configuration operations <ul style="list-style-type: none"> ● Upgrade: Upgrade firmware from remote host to DUT ● Backup: Backup firmware image from DUT to remote host |
| Method | Configuration upgrade / backup method <ul style="list-style-type: none"> ● TFTP: Using TFTP to upgrade/backup firmware ● HTTP: Using WEB browser to upgrade/backup firmware |
| Configuration | Configuration types <ul style="list-style-type: none"> ● Running Configuration: Backup running configuration file. ● Startup Configuration: Backup start configuration file. ● Backup Configuration: Backup backup configuration file. ● RAM Log: Backup log file stored in RAM. ● Flash Log: Backup log files store in Flash. |

For **Backup** action and **TFTP** method:

The screenshot shows a configuration window for Backup operations. It is divided into several sections by dashed lines:

- Action:** Radio buttons for Upgrade and Backup. Backup is selected.
- Method:** Radio buttons for TFTP and HTTP. TFTP is selected.
- Configuration:** Radio buttons for Running Configuration, Startup Configuration, Backup Configuration, RAM Log, and Flash Log. Running Configuration is selected.
- Address Type:** Radio buttons for Hostname, IPv4, and IPv6. Hostname is selected.
- Server Address:** An empty text input field.
- Filename:** An empty text input field.

An "Apply" button is located at the bottom left of the configuration area.

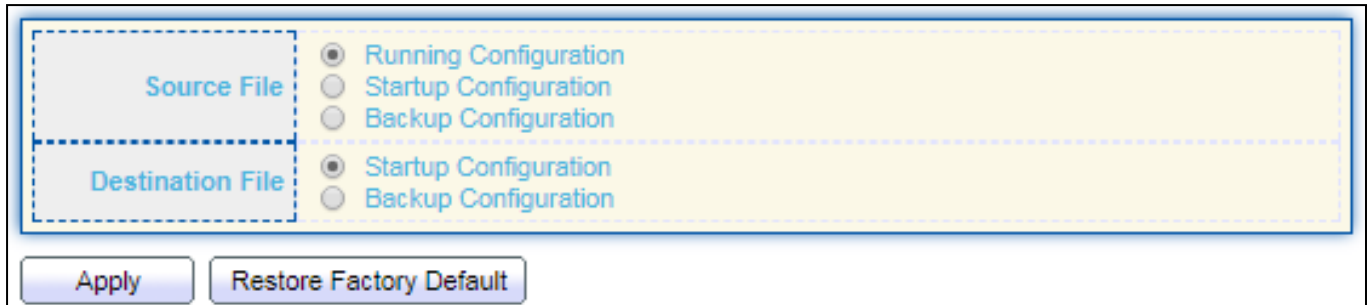
Figure 155 - Management > Configuration > Backup (Method: TFTP)

| Item | Description |
|----------------|---|
| Action | Configuration operations <ul style="list-style-type: none"> ● Upgrade: Upgrade firmware from remote host to DUT ● Backup: Backup firmware image from DUT to remote host |
| Method | Configuration upgrade / backup method <ul style="list-style-type: none"> ● TFTP: Using TFTP to upgrade/backup firmware ● HTTP: Using WEB browser to upgrade/backup firmware |
| Configuration | Configuration types <ul style="list-style-type: none"> ● Running Configuration: Backup running configuration file. ● Startup Configuration: Backup start configuration file. ● Backup Configuration: Backup backup configuration file. ● RAM Log: Backup log file stored in RAM. ● Flash Log: Backup log files store in Flash. |
| Address Type | Specify TFTP server address type <ul style="list-style-type: none"> ● Hostname: Use domain name as server address ● IPv4: Use IPv4 as server address ● IPv6: Use IPv6 as server address |
| Server Address | Specify TFTP server address address. |
| Filename | File name saved on remote TFTP server. |

IV-13-3-2 Save Configuration

This page allows user to manage configuration file saved on DUT and click “**Restore Factory Default**” button to restore factory defaults.

To display the Save Configuration web page, click **Management > Configuration > Save Configuration**.



The screenshot shows a web page interface for saving configuration. It features two sections: 'Source File' and 'Destination File'. The 'Source File' section has three radio buttons: 'Running Configuration' (selected), 'Startup Configuration', and 'Backup Configuration'. The 'Destination File' section has two radio buttons: 'Startup Configuration' (selected) and 'Backup Configuration'. Below these sections are two buttons: 'Apply' and 'Restore Factory Default'.

Figure 156 - Management > Configuration > Save Configuration

| Item | Description |
|------------------|---|
| Source File | Source file types <ul style="list-style-type: none">● Running Configuration: Copy running configuration file to destination.● Startup Configuration: Copy startup configuration file to destination.● Backup Configuration: Copy backup configuration file to destination |
| Destination File | Destination file <ul style="list-style-type: none">● Startup Configuration: Save file as startup configuration.● Backup Configuration: Save file as backup configuration. |

IV-13-4 SNMP

IV-13-4-1 View

To configure and display the SNMP view table, click **Management > SNMP > View**.

View Table

Showing entries Showing 1 to 1 of 1 entries

| <input type="checkbox"/> | View | OID Subtree | Type |
|--------------------------|------|-------------|----------|
| <input type="checkbox"/> | all | .1 | Included |

First Previous **1** Next Last

Figure 157 - Management > SNMP > View

| Item | Description |
|-------------|---|
| View | The SNMP view name. Its maximum length is 30 characters |
| OID Subtree | Specify the ASN.1 subtree object identifier (OID) to be included or excluded from the SNMP view |
| Type | Include or exclude the selected MIBs in the view |

IV-13-4-2 Group

To configure and display the SNMP group settings, click **Management > SNMP > Group**.

Group Table

Showing entries Showing 0 to 0 of 0 entries

| <input type="checkbox"/> | Group | Version | Security Level | View | | |
|--------------------------|-------|---------|----------------|------|-------|--------|
| | | | | Read | Write | Notify |
| 0 results found. | | | | | | |

First Previous **1** Next Last

Configure [SNMP View](#) to associate a non-default view with a group.

Figure 158 - Management > SNMP > Group

| Item | Description |
|---------|--|
| Group | Specify SNMP group name, and the maximum length is 30 characters. |
| Version | Specify SNMP version <ul style="list-style-type: none"> ● SNMPv1: SNMP Version 1. ● SNMPv2: Community-based SNMP Version 2. ● SNMPv3: User security model SNMP version 3. |

| | |
|----------------|---|
| Security Level | Specify SNMP security level <ul style="list-style-type: none"> ● No Security: Specify that no packet authentication is performed. ● Authentication: Specify that no packet authentication without encryption is performed. ● Authentication and Privacy: Specify that no packet authentication with encryption is performed. |
| View | |
| Read | Group read view name. |
| Write | Group write view name. |
| Notify | The view name that sends only traps with contents that is included in SNMP view selected for notification. |

Click "Add" or "Edit" button to view the Add/Edit Group menu.

Add Group

| | |
|-----------------------|---|
| Group | <input style="width: 100%;" type="text"/> |
| Version | <input checked="" type="radio"/> SNMPv1 <input type="radio"/> SNMPv2 <input type="radio"/> SNMPv3 |
| Security Level | <input checked="" type="radio"/> No Security <input type="radio"/> Authentication <input type="radio"/> Authentication and Privacy |
| View | <input checked="" type="checkbox"/> Read <input type="checkbox"/> Write <input type="checkbox"/> Notify <div style="margin-top: 5px;"> <input type="text" value="all"/> ▼ <input type="text" value="all"/> ▼ <input type="text" value="all"/> ▼ </div> |

Apply
Close

Edit Group

| | |
|-----------------------|---|
| Group | 1 |
| Version | <input checked="" type="radio"/> SNMPv1 <input type="radio"/> SNMPv2 <input type="radio"/> SNMPv3 |
| Security Level | <input checked="" type="radio"/> No Security <input type="radio"/> Authentication <input type="radio"/> Authentication and Privacy |
| View | <input checked="" type="checkbox"/> Read <input type="checkbox"/> Write <input type="checkbox"/> Notify <div style="margin-top: 5px;"> <input type="text" value="all"/> ▼ <input type="text" value="all"/> ▼ <input type="text" value="all"/> ▼ </div> |

Apply
Close

Figure 159 - Management > SNMP > Group > Add/Edit Group

| Item | Description |
|---------|--|
| Group | Specify SNMP group name, and the maximum length is 30 characters. |
| Version | Specify SNMP version <input checked="" type="radio"/> SNMPv1: SNMP Version 1. |

| | |
|----------------|--|
| | <ul style="list-style-type: none"> ● SNMPv2: Community-based SNMP Version 2. ● SNMPv3: User security model SNMP version 3. |
| Security Level | Specify SNMP security level <ul style="list-style-type: none"> ● No Security : Specify that no packet authentication is performed. ● Authentication: Specify that no packet authentication without encryption is performed. ● Authentication and Privacy: Specify that no packet authentication with encryption is performed. |
| View | |
| Read | Select read view name if Read is checked. |
| Write | Select write view name, if Write is checked. |
| Notify | Select notify view name, if Notify is checked. |

IV-13-4-3 Community

To configure and display the SNMP community settings, click **Management > SNMP > Community**.

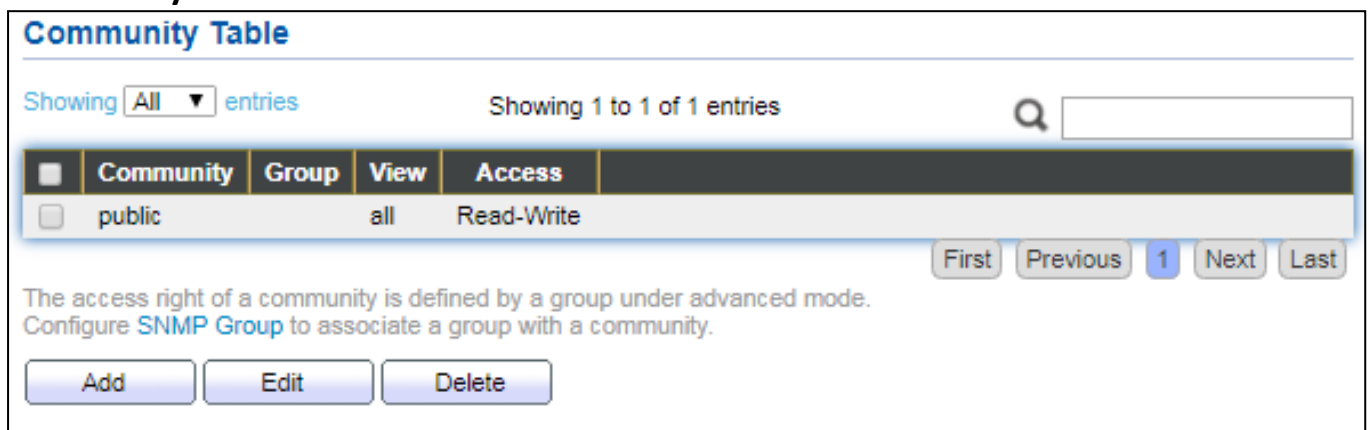


Figure 160 - Management > SNMP > Community

| Item | Description |
|-----------|---|
| Community | The SNMP community name. Its maximum length is 20 characters. |
| Group | Specify the SNMP group configured by the command snmp group to define the object available to the community. |
| View | Specify the SNMP view to define the object available to the community. |
| Access | SNMP access mode <ul style="list-style-type: none"> ● Read-Only: Read only. ● Read-Write: Read and write. |

Click "Add" or "Edit" button to view the Add/Edit Community menu.

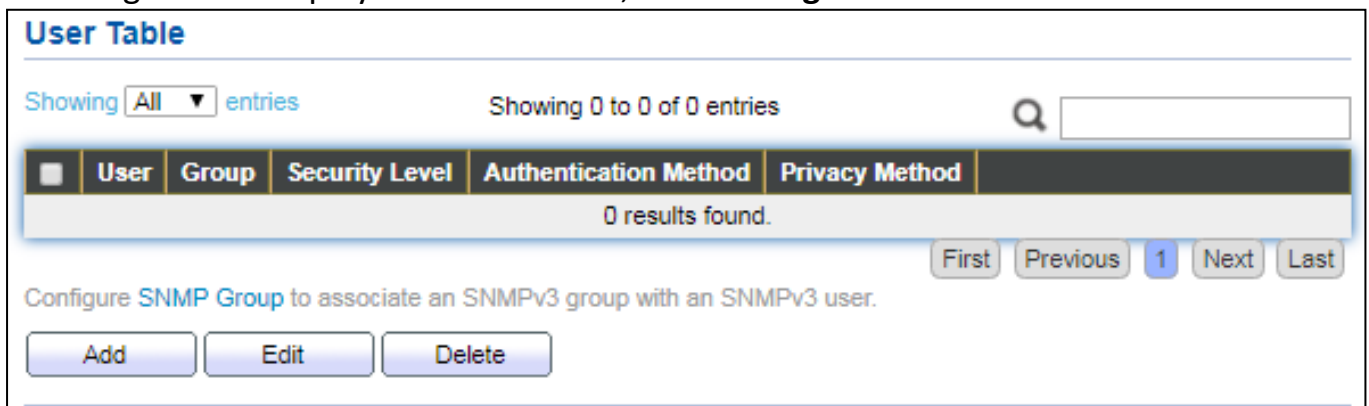
The image displays two screenshots of a network management interface for configuring SNMP communities. The top screenshot, titled "Add Community", shows a form with the following fields: "Community" (an empty text box), "Type" (radio buttons for "Basic" and "Advanced", with "Basic" selected), "View" (a dropdown menu set to "all"), "Access" (radio buttons for "Read-Only" and "Read-Write", with "Read-Only" selected), and "Group" (a dropdown menu set to "1"). Below the form are "Apply" and "Close" buttons. The bottom screenshot, titled "Edit Community", shows the same form with the "Community" field populated with "public", "Type" still set to "Basic", "View" still set to "all", "Access" now set to "Read-Write", and "Group" still set to "1". It also features "Apply" and "Close" buttons.

Figure 161 - Management > SNMP > Group > Add/Edit Community

| Item | Description |
|-----------|---|
| Community | The SNMP community name. Its maximum length is 20 characters. |
| Type | SNMP Community mode <ul style="list-style-type: none"> ● Basic: SNMP community specifies view and access right. ● Advanced: SNMP community specifies group. |
| View | Specify the SNMP view to define the object available to the community. |
| Access | SNMP access mode <ul style="list-style-type: none"> ● Read-Only: Read only. ● Read-Write: Read and write. |
| Group | Specify the SNMP group configured by the command snmp group to define the object available to the community. |

IV-13-4-4 User

To configure and display the SNMP users, click **Management > SNMP > User**.



User Table

Showing **All** entries Showing 0 to 0 of 0 entries

| <input type="checkbox"/> | User | Group | Security Level | Authentication Method | Privacy Method |
|--------------------------|------|-------|----------------|-----------------------|----------------|
| 0 results found. | | | | | |

Configure [SNMP Group](#) to associate an SNMPv3 group with an SNMPv3 user.

Figure 162 - Management > SNMP > User

| Item | Description |
|-----------------------|---|
| User | Specify the SNMP user name on the host that connects to the SNMP agent. The max character is 30 characters. For the SNMP v1 or v2c, the user name must match the community name. |
| Group | Specify the SNMP group to which the SNMP user belongs. |
| Security Level | SNMP privilege mode <ul style="list-style-type: none"> ● No Security: Specify that no packet authentication is performed. ● Authentication: Specify that no packet authentication without encryption is performed. ● Authentication and Privacy: Specify that no packet authentication with encryption is performed. |
| Authentication Method | Authentication Protocol which is available when Privilege Mode is Authentication or Authentication and Privacy. <ul style="list-style-type: none"> ● None: No authentication required. ● MD5: Specify the HMAC-MD5-96 authentication protocol. ● SHA: Specify the HMAC-SHA-96 authentication protocol |
| Privacy Method | Encryption Protocol <ul style="list-style-type: none"> ● None: No privacy required. ● DES: DES algorithm |

Click "Add" or "Edit" button to view Add/Edit User menu.

Add User

| | |
|----------------|--|
| User | <input type="text"/> |
| Group | 11 ▼ |
| Security Level | <input checked="" type="radio"/> No Security <input type="radio"/> Authentication <input type="radio"/> Authentication and Privacy |

Authentication

| | |
|----------|---|
| Method | <input checked="" type="radio"/> None <input type="radio"/> MD5 <input type="radio"/> SHA |
| Password | <input type="password"/> |

Privacy

| | |
|----------|--|
| Method | <input checked="" type="radio"/> None <input type="radio"/> DES |
| Password | <input type="password"/> |

Apply Close

Edit User

| | |
|----------------|--|
| User | 22 |
| Group | 11 ▼ |
| Security Level | <input checked="" type="radio"/> No Security <input type="radio"/> Authentication <input type="radio"/> Authentication and Privacy |

Authentication

| | |
|----------|---|
| Method | <input checked="" type="radio"/> None <input type="radio"/> MD5 <input type="radio"/> SHA |
| Password | <input type="password"/> |

Privacy

| | |
|----------|--|
| Method | <input checked="" type="radio"/> None <input type="radio"/> DES |
| Password | <input type="password"/> |

Apply Close

Figure 163 - Management > SNMP > User > Add/Edit User

| Item | Description |
|----------------|---|
| User | Specify the SNMP user name on the host that connects to the SNMP agent. The max character is 30 characters. |
| Group | Specify the SNMP group to which the SNMP user belongs. |
| Security Level | SNMP privilege mode <ul style="list-style-type: none"> ● No Security: Specify that no packet authentication is performed. ● Authentication: Specify that no packet authentication without encryption is performed. ● Authentication and Privacy: Specify that no packet authentication with encryption is performed. |
| Authentication | |
| Method | Authentication Protocol which is available when Privilege Mode is Authentication or Authentication and Privacy. <ul style="list-style-type: none"> ● None: No authentication required. ● MD5: Specify the HMAC-MD5-96 authentication protocol. ● SHA: Specify the HMAC-SHA-96 authentication protocol. |
| Password | The authentication password, The number of character range is 8 to 32 characters. |
| Privacy | |
| Method | Encryption Protocol <ul style="list-style-type: none"> ● None: No privacy required. ● DES: DES algorithm |
| Password | The privacy password, The number of character range is 8 to 64 characters. |

IV-13-4-5 Engine ID

To configure and display SNMP local and remote engine ID, click Management > SNMP > Engine ID.

Figure 164 - Management > SNMP > Engine ID

| Item | Description |
|------------------------|---|
| Local Engine ID | |
| Engine ID | If checked "User Defined", the local engine ID is configure by user, else use the default Engine ID which is made up of MAC and Enterprise ID. The user defined engine ID is range 10 to 64 hexadecimal characters, and the hexadecimal number must be divided by 2. |
| Remote Engine ID Table | |
| Table | |
| Server Address | Remote host. |
| Engine ID | Specify Remote SNMP engine ID. The engine ID is range10 to 64 hexadecimal characters, and the hexadecimal number must be divided by 2. |

Click "**Add**" button to view Add Remote Engine ID menu.

Figure 165 - Management > SNMP > Add Engine ID

| Item | Description |
|----------------|--|
| Address Type | Remote host address type for Hostname/IPv4/IPv6. |
| Server Address | Remote host. |
| Engine ID | Specify Remote SNMP engine ID. The engine ID is range10 to 64 hexadecimal characters, and the hexadecimal number must be divided by 2. |

Click "**Edit**" button to view Edit Remote Engine ID menu.

Figure 166 - Management > SNMP > Edit Engine ID

| Item | Description |
|----------------|--|
| Server Address | Edit Remote host address |
| Engine ID | Specify Remote SNMP engine ID. The engine ID is range10 to 64 hexadecimal characters, and the hexadecimal number must be divided by 2. |

IV-13-4-6 Trap Event

To configure and display SNMP trap event, click **Management > SNMP > Trap Event**.

| | | |
|------------------------|-------------------------------------|--------|
| Authentication Failure | <input checked="" type="checkbox"/> | Enable |
| Link Up / Down | <input checked="" type="checkbox"/> | Enable |
| Cold Start | <input checked="" type="checkbox"/> | Enable |
| Warm Start | <input checked="" type="checkbox"/> | Enable |

Apply

Figure 167 - Management > SNMP > Trap Event

| Item | Description |
|------------------------|---|
| Authentication Failure | SNMP authentication failure trap, when community not match or user authentication password not match. |
| Link Up/Down | Port link up or down trap. |
| Cold Start | Device reboot configure by user trap. |
| Warm Start | Device reboot by power down trap. |

IV-13-4-7 Notification

To configure the hosts to receive SNMPv1/v2/v3 notification, click **Management > SNMP > Notification**.

Notification Table

Showing All entries Showing 0 to 0 of 0 entries

| <input type="checkbox"/> | Server Address | Server Port | Timeout | Retry | Version | Type | Community / User | Security Level |
|--------------------------|----------------|-------------|---------|-------|---------|------|------------------|----------------|
| 0 results found. | | | | | | | | |

First Previous 1 Next Last

For SNMPv1,2 Notification, [SNMP Community](#) needs to be defined.
For SNMPv3 Notification, [SNMP User](#) must be created.

Add Edit Delete

Figure 168 - Management > SNMP > Notification

| Item | Description |
|----------------|--|
| Server Address | IP address or the hostname of the SNMP trap recipients. |
| Server Port | Recipients server UDP port number. |
| Timeout | Specify the SNMP informs timeout. |
| Retry | Specify the retry counter of the SNMP informs. |
| Version | Specify SNMP notification version <ul style="list-style-type: none"> ● SNMPv1: SNMP Version 1 notification. |

| | |
|----------------|--|
| | <ul style="list-style-type: none"> ● SNMPv2: SNMP Version 2 notification. ● SNMPv3: SNMP Version 3 notification. |
| Type | <p>Notification Type</p> <ul style="list-style-type: none"> ● Trap: Send SNMP traps to the host. ● Inform: Send SNMP informs to the host. |
| Community/User | SNMP community/user name for notification. If version is SNMPv3 the name is user name, else is community name. |
| UDP Port | Specify the UDP port number. |
| Timeout | Specify the SNMP informs timeout. |
| Security Level | <p>SNMP trap packet security level</p> <ul style="list-style-type: none"> ● No Security: Specify that no packet authentication is performed. ● Authentication: Specify that no packet authentication without encryption is performed. ● Authentication and Privacy: Specify that no packet authentication with encryption is performed. |

Click "Add" button to view the Notification menu.

Add Notification

| | |
|-------------------------|--|
| Address Type | <input checked="" type="radio"/> Hostname <input type="radio"/> IPv4 <input type="radio"/> IPv6 |
| Server Address | <input style="width: 100%;" type="text"/> |
| Version | <input checked="" type="radio"/> SNMPv1 <input type="radio"/> SNMPv2 <input type="radio"/> SNMPv3 |
| Type | <input checked="" type="radio"/> Trap <input type="radio"/> Inform |
| Community / User | <input style="width: 100%;" type="text" value="public"/> |
| Security Level | <input checked="" type="radio"/> No Security <input type="radio"/> Authentication <input type="radio"/> Authentication and Privacy |
| Server Port | <input checked="" type="checkbox"/> Use Default <input style="width: 100%;" type="text" value="162"/> (1 - 65535, default 162) |
| Timeout | <input checked="" type="checkbox"/> Use Default <input style="width: 100%;" type="text" value="15"/> Sec (1 - 300, default 15) |
| Retry | <input checked="" type="checkbox"/> Use Default <input style="width: 100%;" type="text" value="3"/> (1 - 255, default 3) |

Apply

Close

Figure 169 - Management > SNMP > Notification > Add Notification

| Item | Description |
|----------------|--|
| Address Type | Notify recipients host address type. |
| Server Address | IP address or the hostname of the SNMP trap recipients. |
| Version | Specify SNMP notification version <ul style="list-style-type: none"> ● SNMPv1: SNMP Version 1 notification. ● SNMPv2: SNMP Version 2 notification. ● SNMPv3: SNMP Version 3 notification. |
| Type | Notification Type <ul style="list-style-type: none"> ● Trap: Send SNMP traps to the host. ● Inform: Send SNMP informs to the host.(version 1 have no inform) |
| Community/User | SNMP community/user name for notification. If version is SNMPv3 the name is user name, else is community name. |
| Security Level | SNMP notification packet security level, the security level must less than or equal to the community/user name <ul style="list-style-type: none"> ● No Security: Specify that no packet authentication is performed. ● Authentication: Specify that no packet authentication without encryption is performed. ● Authentication and Privacy: Specify that no packet authentication with encryption is performed. |
| Server Port | Recipient server UDP port number, if “use default” checked the value is 162, else user configure. |
| Timeout | Specify the SNMP informs timeout, if “use default” checked the value is 15, else user configure. |
| Retry | Specify the SNMP informs retry count, if “use default” checked the value is 3, else user configure. |

Click "Edit" button to view the Edit Notification menu.

Figure 170 - Management > SNMP > Notification > Edit Notification

| Item | Description |
|-----------------|--|
| Server Address | Edit SNMP notify recipients address |
| Version | Specify SNMP notification version <ul style="list-style-type: none"> ● SNMPv1: SNMP Version 1 notification. ● SNMPv2: SNMP Version 2 notification. ● SNMPv3: SNMP Version 3 notification. |
| Type | Notification Type <ul style="list-style-type: none"> ● Trap: Send SNMP traps to the host. ● Inform: Send SNMP informs to the host.(version 1 have no inform) |
| Community/User | SNMP community/user name for notification. If version is SNMPv3 the name is user name, else is community name. |
| Community Level | SNMP notification packet security level, the security level must less than or equal to the community/user name <ul style="list-style-type: none"> ● No Security: Specify that no packet authentication is performed. ● Authentication: Specify that no packet authentication without encryption is performed. ● Authentication and Privacy: Specify that no packet authentication with encryption is performed. |
| Server Port | Recipients server UDP port number, if “use default” checked the value |

| | |
|---------|---|
| | is 162, else user configure. |
| Timeout | Specify the SNMP informs timeout, if “use default” checked the value is 15, else user configure. |
| Retry | Specify the SNMP informs retry count, if “use default” checked the value is 3, else user configure. |

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1. Reorient or relocate the receiving antenna.
2. Increase the separation between the equipment and receiver.
3. Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
4. Consult the dealer or an experienced radio technician for help.

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This device and its antenna must not be co-located or operating in conjunction with any other antenna or transmitter. This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation. Any changes or modifications not expressly approved by the party responsible for compliance could void the authority to operate equipment.

Federal Communications Commission (FCC) Radiation Exposure Statement

This equipment complies with FCC radiation exposure set forth for an uncontrolled environment. In order to avoid the possibility of exceeding the FCC radio frequency exposure limits, human proximity to the antenna shall not be less than 2.5cm (1 inch) during normal operation.

Federal Communications Commission (FCC) RF Exposure Requirements

This EUT is compliance with SAR for general population/uncontrolled exposure limits in ANSI/IEEE C95.1-1999 and had been tested in accordance with the measurement methods and procedures specified in OET Bulletin 65 Supplement C. The equipment version marketed in US is restricted to usage of the channels 1-11 only. This equipment is restricted to *indoor* use when operated in the 5.15 to 5.25 GHz frequency range.

R&TTE Compliance Statement

This equipment complies with all the requirements of DIRECTIVE 2014/30/EU OF THE EUROPEAN PARLIAMENT AND THE COUNCIL of March 9, 1999 on radio equipment and telecommunication terminal equipment and the mutual recognition of their conformity (R&TTE). The R&TTE Directive repeals and replaces in the directive 98/13/EEC (Telecommunications Terminal Equipment and Satellite Earth Station Equipment) As of April 8, 2000.

Safety

This equipment is designed with the utmost care for the safety of those who install and use it. However, special attention must be paid to the dangers of electric shock and static electricity when working with electrical equipment. All guidelines of this and of the computer manufacture must therefore be allowed at all times to ensure the safe use of the equipment.

EU Countries Intended for Use

The ETSI version of this device is intended for home and office use in Austria, Belgium, Bulgaria, Cyprus, Czech, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Turkey, and United Kingdom. The ETSI version of this device is also authorized for use in EFTA member states: Iceland, Liechtenstein, Norway, and Switzerland.

EU Countries Not Intended for Use

None

EU Declaration of Conformity

- English:** This equipment is in compliance with the essential requirements and other relevant provisions of Directive 2014/30/EU.
- Français:** Cet équipement est conforme aux exigences essentielles et autres dispositions de la directive 2014/30/EU.
- Čeština:** Toto zařízení je v souladu se základními požadavky a ostatními příslušnými ustanoveními směrnic 2014/30/EU.
- Polski:** Urządzenie jest zgodne z ogólnymi wymaganiami oraz szczególnymi warunkami określonymi Dyrektywą UE 2014/30/EU.
- Română:** Acest echipament este în conformitate cu cerințele esențiale și alte prevederi relevante ale Directivei 2014/30/EU.
- Русский:** Это оборудование соответствует основным требованиям и положениям Директивы 2014/30/EU.
- Magyar:** Ez a berendezés megfelel az alapvető követelményeknek és más vonatkozó irányelveknek (2014/30/EU).
- Türkçe:** Bu cihaz 2014/30/EU. direktifleri zorunlu istekler ve diğer hükümlerle ile uyumludur.
- Українська:** Обладнання відповідає вимогам і умовам директиви 2014/30/EU.
- Slovenčina:** Toto zariadenie spĺňa základné požiadavky a ďalšie príslušné ustanovenia smerníc 2014/30/EU.
- Deutsch:** Dieses Gerät erfüllt die Voraussetzungen gemäß den Richtlinien 2014/30/EU.
- Español:** El presente equipo cumple los requisitos esenciales de la Directiva 2014/30/EU.
- Italiano:** Questo apparecchio è conforme ai requisiti essenziali e alle altre disposizioni applicabili della Direttiva 2014/30/EU.
- Nederlands:** Dit apparaat voldoet aan de essentiële eisen en andere van toepassing zijnde bepalingen van richtlijn 2014/30/EU.
- Português:** Este equipamento cumpre os requisitos essenciais da Directiva 2014/30/EU.
- Norsk:** Dette utstyret er i samsvar med de viktigste kravene og andre relevante regler i Direktiv 2014/30/EU.
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- Dansk:** Dette udstyr er i overensstemmelse med de væsentligste krav og andre relevante forordninger i direktiv 2014/30/EU.
- suomen kieli:** Tämä laite täyttää direktiivien 2014/30/EU. oleelliset vaatimukset ja muut asiaankuuluvat määräykset.

FOR USE IN            
            
         



WEEE Directive & Product Disposal



At the end of its serviceable life, this product should not be treated as household or general waste. It should be handed over to the applicable collection point for the recycling of electrical and electronic equipment, or returned to the supplier for disposal.

Declaration of Conformity

We, Edimax Technology Co., Ltd., declare under our sole responsibility, that the equipment described below complies with the requirements of the European R&TTE directives.

Equipment: 24-port Gigabit Ethernet+4 SFP Lite Web Smart Switch
Model No.: GS-5424G

The following European standards for essential requirements have been followed:

Directives 2014/30/EU

EMC : EN 55032:2015
EN 61000-3-2:2014 Class A
EN 61000-3-3:2013
EN 55024:2015
Safety (LVD) : EN 60950-1:2006 + A11:2009 + A1:2010 + A12:2011+A2:2013

Edimax Technology Europe B.V.
Fijenhof 2,
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a company of :
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No. 278, Xinhu 1st Rd.,
Neihu Dist., Taipei City,
Taiwan

Signature:

Printed Name: Vivian Ma
Title: Director
Edimax Technology Europe B.V.



Date of Signature: March, 2018

Signature:

A handwritten signature in black ink, appearing to read 'Albert Chang', written over a horizontal line.

Printed Name:

Albert Chang

Title:

Director

Edimax Technology Co., Ltd.

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